Pundit-AE3

Barebone System

E2018

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Table of contents

Notices vi
Safety information vii
About this guide viii
System package contents x

Chapter 1: System introduction

1.1 Welcome! 1-2
1.2 Front panel 1-2
1.3 Rear panel 1-4
1.4 Internal components 1-6

Chapter 2: Basic installation

2.1 Preparation 2-2
2.2 Before you proceed 2-2
2.3 Removing the covers 2-3
2.3.1 Removing the system cover 2-3
2.3.2 Removing the front panel assembly 2-4
2.4 Installing the CPU 2-5
2.4.1 Overview 2-5
2.4.2 CPU installation 2-5
2.4.3 CPU fan and heatsink assembly installation 2-6
2.5 Installing a DIMM 2-8
2.5.1 Memory configurations 2-8
2.5.2 Installing a DIMM 2-10
2.5.3 Removing a DIMM 2-10
2.6 Installing an expansion card 2-11
2.6.1 Expansion slots 2-11
2.6.2 Expansion card installation 2-12
2.7 Installing an optical drive 2-14
2.8 Installing hard disk drives (HDDs) 2-16
2.8.1 Hard disk drive bays 2-16
2.8.2 SATA hard disk drive installation 2-16
2.8.3 IDE hard disk drive installation 2-18
2.8.4 Uninstalling a hard disk drive 2-18

Table of contents

2.9 Replacing the covers 2-19
2.9.1 Replacing the front panel assembly 2-19
2.9.2 Replacing the system cover 2-21
2.10 Installing the foot stands 2-22
2.11 Selecting the voltage 2-23
2.12 Connecting external devices 2-23
2.12.1 To the front panel 2-23
2.12.2 To the rear panel 2-24

Chapter 3: Getting started

3.1 Installing an operating system 3-2
3.2 Support CD information 3-2
3.2.1 Running the support CD 3-2
3.2.2 Drivers menu 3-3
3.2.3 Utilities menu 3-4
3.2.4 ASUS contact information 3-5
3.2.5 Other information 3-5
3.3 Software information 3-8
3.3.1 SoundMAX® 4 XL software 3-8
3.3.2 ASUS PC Probe II 3-13
3.3.3 Cool 'n' Quiet!™ Technology 3-20

Chapter 4: Motherboard info

4.1 Motherboard overview 4-2
4.2 Jumpers 4-3
4.3 Connectors 4-5
4.3.1 Rear panel connectors 4-5
4.3.2 Internal connectors 4-5

Chapter 5: BIOS setup

5.1 Managing and updating your BIOS 5-2
5.1.1 ASUS EZ Flash utility 5-2
5.1.2 ASUS CrashFree BIOS 2 utility 5-3
5.1.3 ASUS Update utility 5-4

Table of contents

5.2 BIOS setup program 5-7
5.2.1 BIOS menu screen 5-8
5.2.2 Menu bar 5-8
5.2.3 Navigation keys 5-9
5.2.4 Menu items 5-9
5.2.5 Sub-menu items 5-9
5.2.6 Configuration fields 5-9
5.2.7 Pop-up window 5-9
5.2.8 Scroll bar 5-9
5.2.9 General help 5-9
5.3 Main menu 5-10
5.3.1 System Time 5-10
5.3.2 System Date 5-10
5.3.3 Legacy Diskette A 5-10
5.3.4 Primary, Secondary Third, and Fourth IDE Master/Slave 5-11
5.3.5 OnBoard PCI SATA Controller 5-12
5.3.6 System Information 5-12
5.4 Advanced menu 5-13
5.4.1 CPU Configuration 5-13
5.4.2 Chipset 5-14
5.4.3 Onboard Devices Configuration 5-17
5.4.4 PCI PnP 5-20
5.5 Power menu 5-22
5.5.1 Suspend Mode 5-22
5.5.2 Repost Video on S3 Resume 5-22
5.5.3 ACPI 2.0 Support 5-22
5.5.4 ACPI APIC Support 5-22
5.5.5 APM Configuration 5-23
5.5.6 Hardware Monitor 5-25
5.6 Boot menu 5-26
5.6.1 Boot Device Priority 5-26
5.6.2 Boot Settings Configuration 5-27
5.6.3 Security 5-28
5.7 Exit menu 5-31

Notices

Federal Communications Commission Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with manufacturer's instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

WARNING! The use of shielded cables for connection of the monitor to the graphics card is required to assure compliance with FCC regulations. Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

Canadian Department of Communications Statement

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

This class B digital apparatus complies with Canadian ICES-003.

Safety information

Electrical safety

- To prevent electrical shock hazard, disconnect the power cable from the electrical outlet before relocating the system.
- When adding or removing devices to or from the system, ensure that the power cables for the devices are unplugged before the signal cables are connected.
- If the power supply is broken, do not try to fix it by yourself. Contact a qualified service technician or your retailer.

Operation safety

- Before installing devices into the system, carefully read all the documentation that came with the package.
- Before using the product, make sure all cables are correctly connected and the power cables are not damaged. If you detect any damage, contact your dealer immediately.
- To avoid short circuits, keep paper clips, screws, and staples away from connectors, slots, sockets and circuitry.
- Avoid dust, humidity, and temperature extremes. Do not place the product in any area where it may become wet. Place the product on a stable surface.
- If you encounter technical problems with the product, contact a qualified service technician or your retailer.

Lithium-Ion Battery Warning

CAUTION: Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturerís instructions.

VORSICHT: Explosionsgetahr bei unsachgemäßen Austausch der Batterie. Ersatz nur durch denselben oder einem vom Hersteller empfohlenem ähnljchen Typ. Entsorgung gebrauchter Batterien nach Angaben des Herstellers.

LASER PRODUCT WARNING

CLASS 1 LASER PRODUCT

About this guide

Audience

This guide provides general information and installation instructions about the ASUS barebone system. This guide is intended for experienced users and integrators with hardware knowledge of personal computers.

How this guide is organized

This guide contains the following parts:

1. **Chapter 1: System introduction**

   This chapter gives a general description of the barebone system. The chapter lists the system features including introduction on the front and rear panel, and internal components.

2. **Chapter 2: Basic installation**

   This chapter provides step-by-step instructions on how to install components in the system.

3. **Chapter 3: Getting started**

   This chapter helps you power up the system and install drivers and utilities from the support CD.

4. **Chapter 4: Motherboard info**

   This chapter gives information about the motherboard that comes with the system. This chapter includes the motherboard layout, jumper settings, and connector locations.

5. **Chapter 5: BIOS setup**

   This chapter tells how to change system settings through the BIOS Setup menus and describes the BIOS parameters.

Where to find more information

Refer to the following sources for additional information and for product and software updates.

1. **ASUS Websites**

   The ASUS websites worldwide provide updated information on ASUS hardware and software products. Refer to the ASUS contact information.

2. **Optional Documentation**

   Your product package may include optional documentation, such as warranty flyers, that may have been added by your dealer. These documents are not part of the standard package.

Conventions used in this guide

WARNING: Information to prevent injury to yourself when trying to complete a task.

CAUTION: Information to prevent damage to the components when trying to complete a task.

IMPORTANT: Instructions that you MUST follow to complete a task.

NOTE: Tips and additional information to aid in completing a task.

Typography

Bold text	Indicates a menu or an item to select.
Italics	Used to emphasize a word or a phrase.
<Key>	Keys enclosed in the less-than and greater-than sign means that you must press the enclosed key. Example: <Enter> means that you must press the Enter or Return key.
<Key1+Key2+Key3>	If you must press two or more keys simultaneously, the key names are linked with a plus sign (+). Example: <Ctrl+Alt+D>
`Command`	Means that you must type the command exactly as shown, then supply the required item or value enclosed in brackets. Example: At the DOS prompt, type the command line: `format a:`

System package contents

Check your barebone system package for the following items.

If any of the items is damaged or missing, contact your retailer immediately.

1. **ASUS Pundit-AE3 barebone system with**
   - ASUS motherboard
   - 275 W PFC power supply unit
2. **Accessories**
   - CPU fan and heatsink assembly
   - Foot stand and screw (1 pair) for vertical placement
   - Rubber stand (x 4) for horizontal placement
   - Hard disk drive screw (x 8)
   - Optical drive screw (x 2)
   - Rubber washer (x 8)
3. **Cables**
   - AC power cable
   - IDE cable
   - Serial ATA signal cable (x 2)
4. **Support CD**
5. **User guide**
6. **Optional component**
   - Optical drive *(CD-ROM/CD-RW/DVD-ROM/DVD-RW)*

Chapter 1

This chapter gives a general description of the barebone system. The chapter lists the system features including introduction on the front and rear panel, and internal components.

ASUS Pundit-AE3

System introduction

1.1 Welcome!

Thank you for choosing the **ASUS Pundit-AE3**!

The ASUS Pundit-AE3 is an all-in-one barebone system with powerful and flexible features.

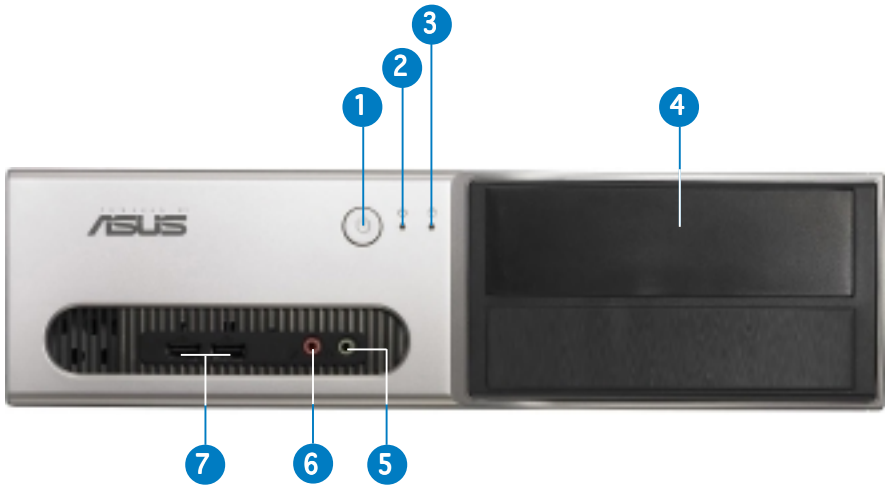
The system comes in a stylish mini-tower casing, and powered by the ASUS motherboard that supports the AMD Athlon™ 64 FX/Athlon™ 64/Athlon™/ Sempron™ processor in the 754-pin package with 800 MHz FSB and up to 2 GB system memory.

With audio capabilities, extensive connectivity, and Fast Ethernet LAN, Pundit-AE3 is designed for the sophisticated. The system's ergonomic design allows vertical or horizontal placement so you can maximize your desktop space.

With these and many more, the Pundit-AE3 definitely delivers the cutting edge technology for your computing and multimedia needs.

1.2 Front panel

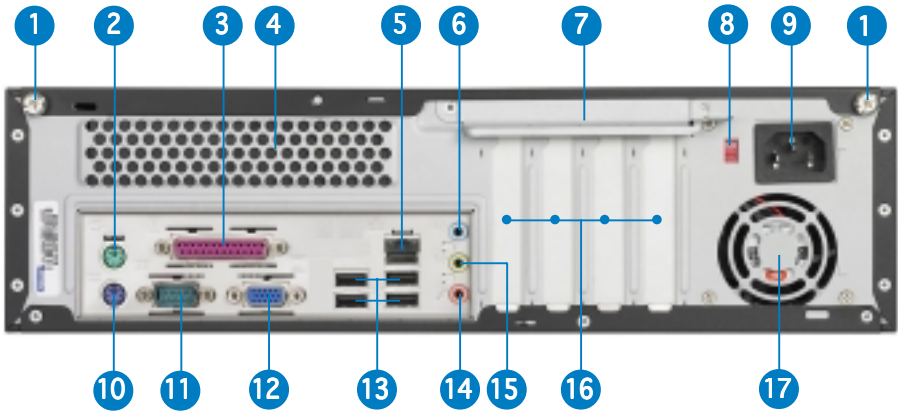
The front panel includes the system and audio control buttons and LEDs.



1. **Power button.** Press this button to turn the system on or off.
2. **Power LED.** This LED lights up to indicate that the system is ON.
3. **HDD LED.** This LED lights up when data is being read from or written to the hard disk drive.
4. **5.25-inch drive bay cover.** This covers the 5.25-inch drive bay for an optical drive.
5. **Headphone port.** This port (lime) is a combined headphone (Line Out) and S/PDIF Out port. The port functions as audio Line Out when you connect a headphone with a stereo mini-plug. The port functions as S/PDIF Out when you connect an external audio output device that supports the S/PDIF feature.
6. **Microphone port.** This Mic (pink) port connects a microphone.
7. **USB 2.0 ports.** These Universal Serial Bus 2.0 (USB 2.0) ports are available for connecting USB 2.0 devices such as a mouse, printer, scanner, camera, PDA, and others.

1.3 Rear panel

The system rear panel includes the power connector and several I/O ports that allow convenient connection of devices.



1. **Cover screws.** Secures the system cover.
2. **PS/2 mouse port** . This green 6-pin connector is for a PS/2 mouse.
3. **Parallel port** . This 25-pin port connects a printer, scanner, or other devices.
4. **Air vents.** Provide ventilation for the system.
5. **LAN (RJ-45) port** . This port allows Fast Ethernet connection to a Local Area Network (LAN) through a network hub.
6. **Line In port** . This Line In (light blue) port connects a tape player or other audio sources. In 6-channel mode, the function of this port becomes Low Frequency Enhanced Output/Center.
7. **Metal bracket lock**. Secures the expansion slot/card metal brackets.
8. **Voltage selector.** Allows you to adjust the system input voltage according to the voltage supply in your area. See the "Voltage selector" section on page 2-24 before adjusting this switch.
9. **Power connector.** Connects the power plug is for the power cable and plug.
10. **PS/2 keyboard port** . This purple 6-pin connector is for a PS/2 keyboard.
11. **Serial port** . Connects a mouse, modem, or other devices that conforms with serial specification.
12. **VGA port** . Connects a VGA monitor.
13. **USB 2.0 ports** . These Universal Serial Bus 2.0 (USB 2.0) ports are available for connecting USB 2.0 devices such as a mouse, printer, scanner, camera, PDA, and others.

14. **Microphone port.** This Microphone (pink) port connects a microphone. In 4/6-channel mode, the function of this port becomes Surround Speaker.

15. **Line Out port.** This Line Out (lime) port connects a headphone or a speaker. In 4/6-channel mode, the function of this port becomes Front Speaker Out.

The functions of the Line Out, Line In, and Microphone ports change when you select the 6-channel configuration. Refer to the table below for audio ports function variation.

Audio ports function variation

Port	Headphone/2-Channel	4-Channel	6-Channel
Light Blue	Line In	No function	LFE* Output/Center
Lime	Line Out	Front Speaker Out	Front Speaker Out
Pink	Mic In	Surround	Surround

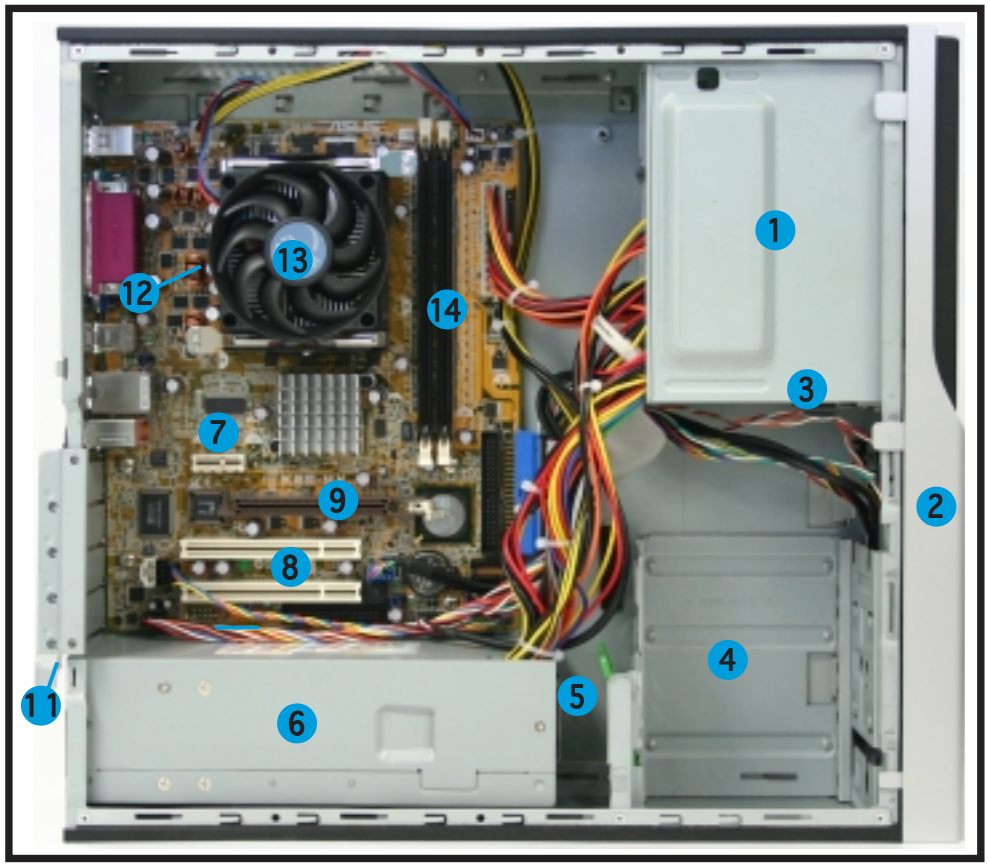
** Low Frequency Enhanced*

16. **Expansion slot metal brackets.** Covers the AGP, PCI Express x1, and PCI slots.

17. **Power fan vents.** Provide ventilation for the power supply unit.

1.4 Internal components

The illustration below is the internal view of the system when you remove the top cover and the chassis support bracket. The installed components are labeled for your reference. Proceed to Chapter 2 for instructions on installing additional system components.



1. 5.25-inch empty optical drive bay
2. Front panel cover
3. Optical drive lock
4. Hard disk drive bays
5. Hard disk drive lock
6. Power supply unit
7. PCI Express x1 slot
8. PCI slots
9. AGP slot
10. ASUS motherboard
11. Metal bracket lock
12. Socket 754
13. CPU fan and heatsink assembly
14. DIMM sockets

Chapter 2

This chapter provides step-by-step instructions on how to install components in the system.

ASUS Pundit-AE3

Basic installation

2.1 Preparation

Before you proceed, make sure that you have all the components you plan to install in the system.

Basic components to install

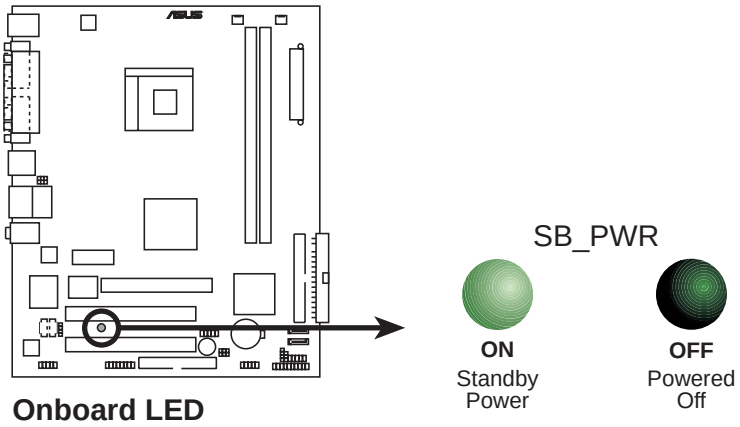
1. Central processing unit (CPU)
2. DDR Dual Inline Memory Module (DIMM)
3. Expansion card(s)
4. Hard disk drive
5. Optical drive

2.2 Before you proceed

Take note of the following precautions before you install components into the system.

- Use a grounded wrist strap or touch a safely grounded object or a metal object, such as the power supply case, before handling components to avoid damaging them due to static electricity.
- Hold components by the edges to avoid touching the ICs on them.
- Whenever you uninstall any component, place it on a grounded antistatic pad or in the bag that came with the component.

The system motherboard comes with an onboard standby power LED. This LED lights up to indicate that the system is ON, in sleep mode or in soft-off mode, and not powered OFF. Unplug the power cable from the power outlet and make sure that the standby power LED is OFF before installing any system component.



Onboard LED

2.3 Removing the covers

2.3.1 Removing the system cover

To remove the cover and metal chassis support:

1. On the rear panel, locate the two thumb screws that secure the cover to the chassis.

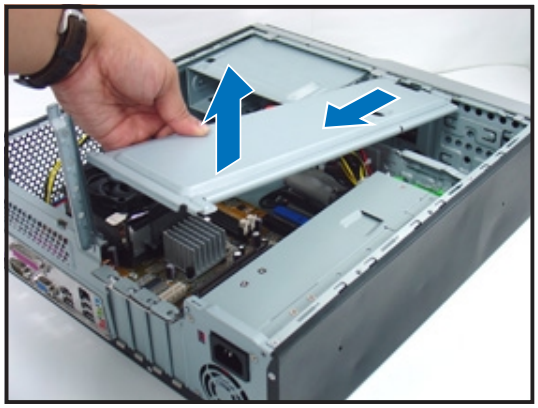
2. Remove the cover screws. Keep the screws for later use.

3. Slightly pull the cover toward the rear panel until the cover hooks disengages from the chassis holes.

4. Lift the system cover, then set aside.

5. Lift the expansion card lock to a 90°-100° angle.

6. Lift the chassis support bracket to a 45° angle, then carefully pull to release. Set the chassis support bracket aside.

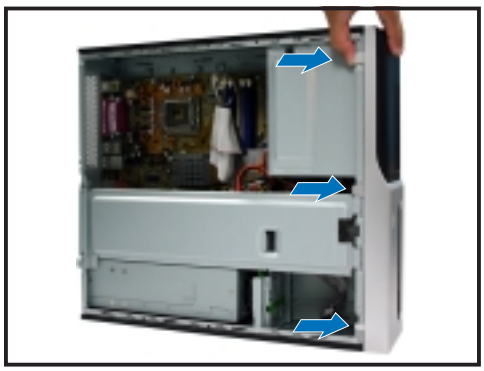


2.3.2 Removing the front panel assembly

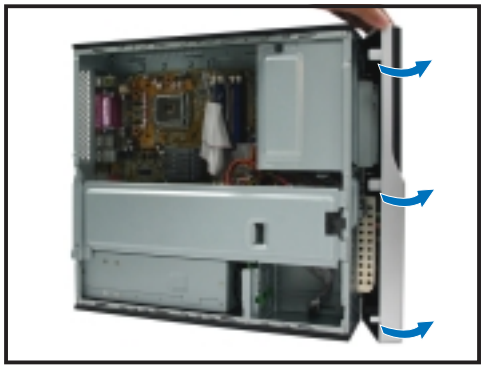
To remove the front panel assembly:

1. Place the system vertically.
2. Locate the front panel assembly hooks.

3. Pull the hooks outward to release the front panel assembly.



4. Swing the left edge of the front panel assembly outward.



5. Unhook the hinge-like tabs from the holes on the right side of the chassis to detach.

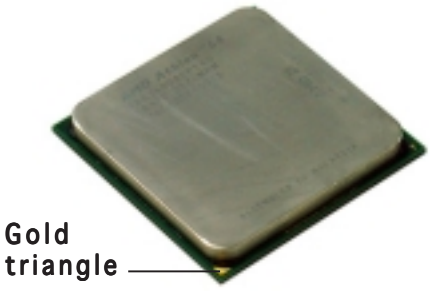
Do not use too much force when removing the front panel assembly.

2.4 Installing the CPU

2.4.1 Overview

The motherboard comes with a surface mount 754-pin Zero Insertion Force (ZIF) socket designed for the AMD Athlon™ 64 FX/Athlon™ 64/Sempron™ processor. The 128-bit-wide data paths of these processors can run applications faster than processors with only 32-bit or 64-bit wide data paths.

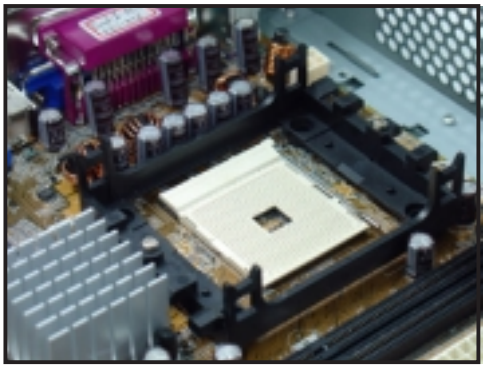
Take note of the marked corner (with gold triangle) on the CPU. This mark should match a specific corner on the socket to ensure correct installation.



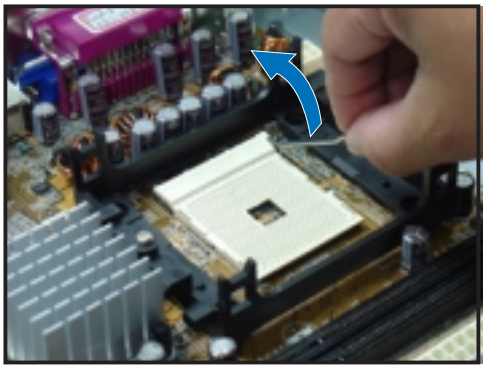
2.4.2 CPU installation

To install a CPU:

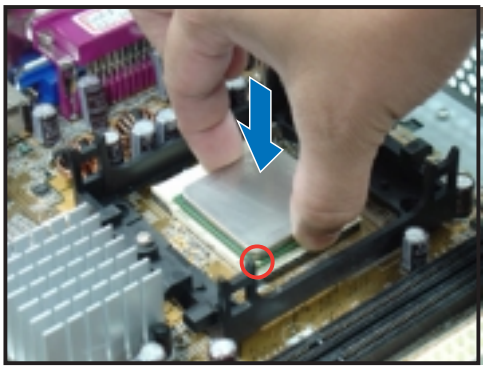
1. Locate the 754-pin CPU socket on the motherboard.



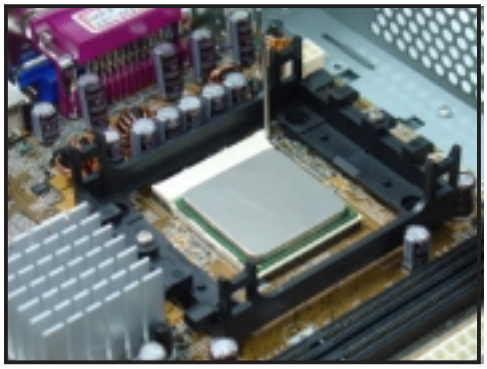
2. Unlock the socket by pressing the lever sideways then lifting it up to a 90° angle.



3. Position the CPU above the socket such that its marked corner matches the corner opposite the socket lever.

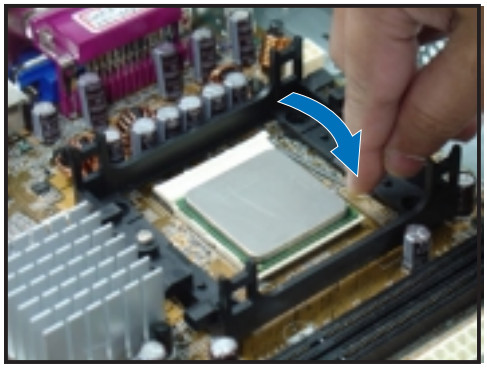


4. Carefully insert the CPU to the socket until it fits in place.



The CPU fits only in one correct orientation. Do not force the CPU into the socket to prevent bending the pins and damaging the CPU!

5. When the CPU is in place, push down the socket lever to secure the CPU. The lever clicks on the side tab to indicate that it is locked.

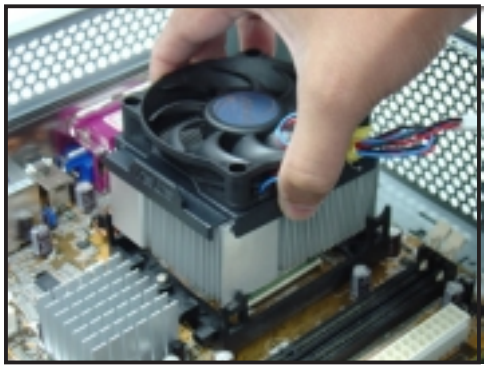


2.4.3 CPU fan and heatsink assembly installation

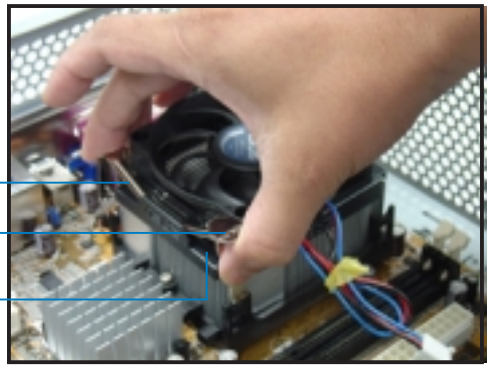
A proprietary CPU fan and heatsink assembly is included in the system package . DO NOT replace the CPU fan and heatsink assembly with other models.

To install the CPU fan and heatsink assembly:

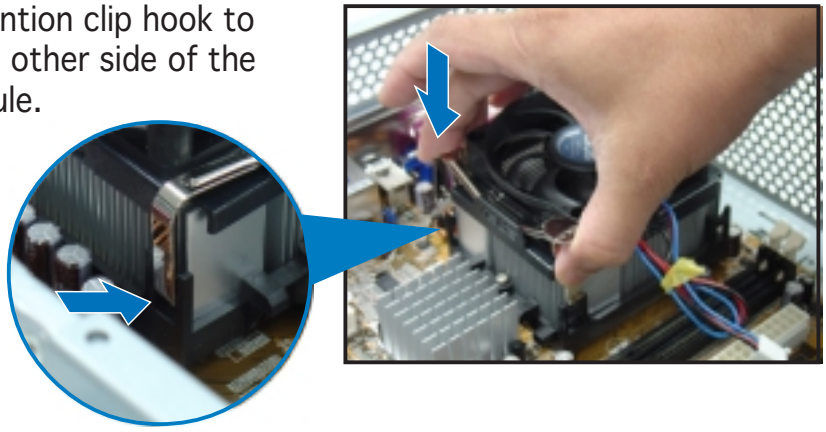
1. Position the CPU fan and heatsink assembly on top of the installed CPU.



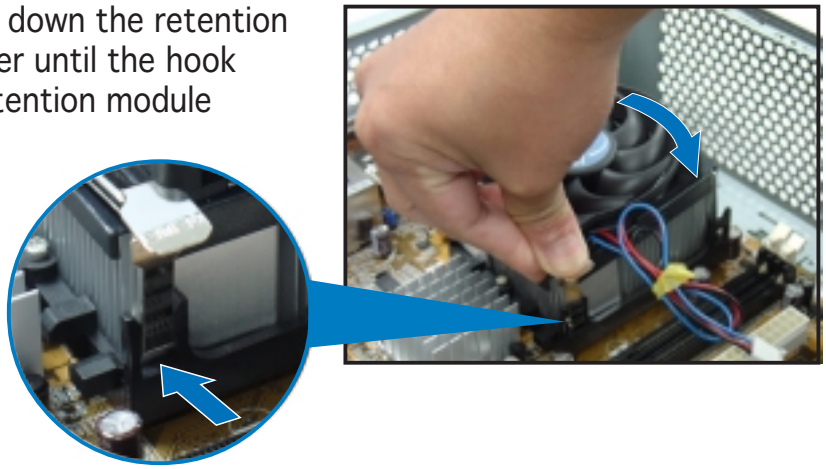
2. Align the retention clip with the rails on the side of the CPU fan.



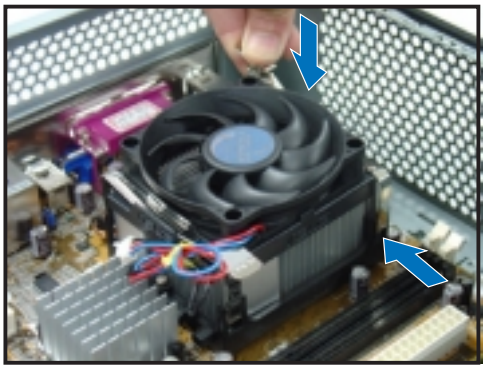
3. Insert one retention clip hook to the hole at the other side of the retention module.



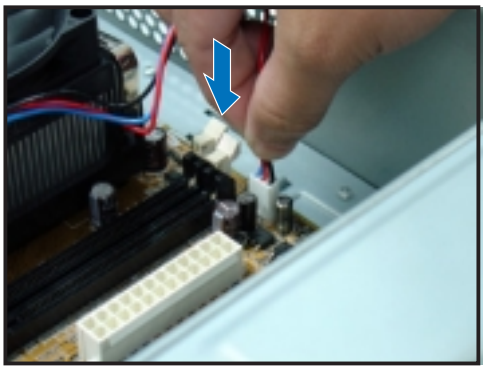
4. Carefully press down the retention clip locking lever until the hook attaches to retention module hole.



5. Install the second retention clip. Make sure that the retention clip locking levers are on opposite corners. Refer to the illustration on the right.



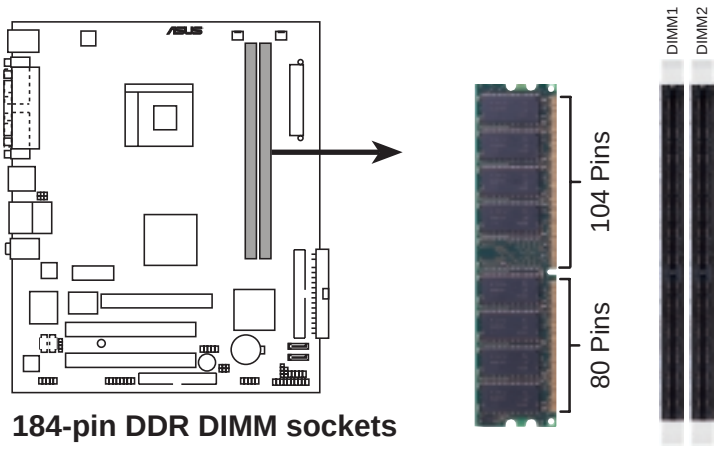
6. Connect the CPU fan cable to the CPU fan connector on the motherboard. Refer to Chapter 4 for the location of the CPU fan connector.



2.5 Installing a DIMM

The system motherboard comes with two Double Data Rate (DDR) Dual Inline Memory Module (DIMM) sockets.

The following figure illustrates the location of the sockets:



184-pin DDR DIMM sockets

2.5.1 Memory configurations

You may install up to 2 GB system memory using 256 MB, 512 MB, and 1 GB DDR DIMMs.

- Install only **identical** (the same type and size) DDR DIMMs.
- Always install DIMMs with the same CAS latency. For optimum compatibility, we recommend that you obtain memory modules from the same vendor. Refer to the Qualified DDR400 Vendors List on the next page.
- This motherboard does not support memory modules made up of 128 Mb chips or double-sided x16 memory modules.

DDR400 Qualified Vendors List

Size	Vendor	Model	CL	Brand	Side(s)	Component	DIMM support (optional)	
							A	B
256 MB	KINGSTON	KVR400X64C3A/256	N/A	Hynix	SS	HY5DU56822BT-D43		•
512 MB	KINGSTON	KVR400X64C3A/512	N/A	Hynix	DS	HY5DU56822BT-D43		•
256 MB	KINGSTON	KVR400X64C3A/256	N/A	Infineon	SS	HYB25D256800BT-5B	•	•
512 MB	KINGSTON	KVR400X64C3A/512	N/A	Infineon	DS	HYB25D256809BT-5B	•	•
256 MB	KINGSTON	KVR400X64C3A/256	N/A	KINGSTON	SS	D3208DL2T-5		•
512 MB	KINGSTON	KHX3200A/512	N/A	N/A	DS	N/A	•	•
1024 MB	KINGSTON	KVR400X64C3A/1G	3	N/A	DS	HYB25D512800BE-5B	•	•
1024 MB	KINGSTON	KHX3200ULK2/1G	2	N/A	DS	N/A		•
256 MB	SAMSUNG	M368L3223ETM-CCC	N/A	SAMSUNG	SS	K4H560838E-TCCC		•
256 MB	SAMSUNG	M368L3223FTN-CCC	3	SAMSUNG	SS	K4H560838F-TCCC	•	•
512 MB	SAMSUNG	M368L6423FTN-CCC	3	SAMSUNG	DS	K4H560838F-TCCC	•	•
512 MB	SAMSUNG	M368L6523BTM-CCC	3	SAMSUNG	SS	K4H510838B-TCCC	•	•
256 MB	MICRON	MT8VDDT3264AG-40BCB	N/A	MICRON	SS	MT46V32M8TG-5BC	•	•
512 MB	MICRON	MT16VDDT6464AG-40BCB	N/A	MICRON	DS	MT46V32M8TG-5BC	•	•
256 MB	Infineon	HYS64D32300HU-5-C	3	Infineon	SS	HYB25D256800CE-5C	•	•
512 MB	Infineon	HYS64D64320HU-5-C	N/A	Infineon	DS	HYB25D256800CE-5C	•	•
256 MB	Infineon	HYS64D32301HU-5-C	3	Infineon	SS	HYB25D512160CE-5C	•	•
512 MB	Infineon	HYS64D64300HU-5-C	3	Infineon	SS	HYB25D512800CE-5C	•	•
1024 MB	Infineon	HYS64D128320HU-5-C	3	Infineon	DS	HYB25D512800CE-5B		•
256 MB	CORSAIR	CMX256A-3200C2PT	2	Winbond	SS	W942508BH-5	•	•
512 MB	CORSAIR	CMX512-3200C2	2	Winbond	DS	N/A	•	•
512 MB	CORSAIR	VS512MB400	2.5	VALUE seLecT	DS	VS32M8-5	•	
1024 MB	CORSAIR	TWINX2048-3200C2	3	N/A	DS	N/A	•	•
256 MB	Hynix	HYMD232645D8J-D43	3	Hynix	SS	HY5DU56822DT-D43	•	•
512 MB	Hynix	HYMD264646D8J-D43	3	Hynix	DS	HY5DU56822DT-D43	•	•

SS - Single-sided

DS - Double-sided

CL- CAS Latency

DIMM support:

A - Supports one module inserted in any slot as Single-channel memory configuration

B - Supports one pair of modules inserted into the slots as one pair of Dual-channel memory configuration

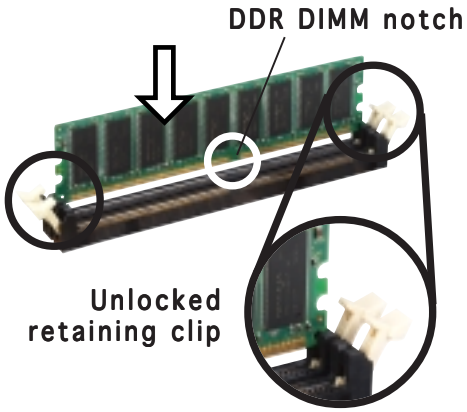
Visit the ASUS website (www.asus.com) for the latest DDR Qualified Vendors List.

2.5.2 Installing a DIMM

Make sure to unplug the power supply before adding or removing DIMMs or other system components. Failure to do so may cause severe damage to both the motherboard and the components.

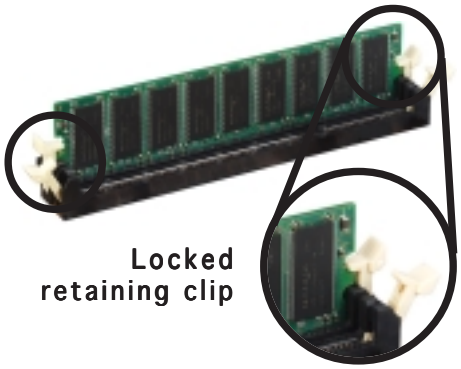
Follow these steps to install a DIMM.

1. Locate the DIMM sockets in the motherboard.
2. Unlock a DIMM socket by pressing the retaining clips outward.
3. Align a DIMM on the socket such that the notch on the DIMM matches the break on the socket.



A DDR DIMM is keyed with a notch so that it fits in only one direction. DO NOT force a DIMM into a socket to avoid damaging the DIMM.

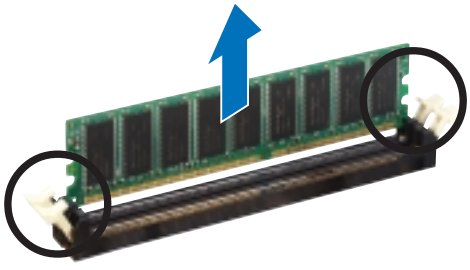
4. Firmly insert the DIMM into the socket until the retaining clips snap back in place and the DIMM is properly seated.



2.5.3 Removing a DIMM

Follow these steps to remove a DIMM.

1. Simultaneously press the retaining clips outward to unlock the DIMM.



Support the DIMM lightly with your fingers when pressing the retaining clips. The DIMM might get damaged when it flips out with extra force.

2. Remove the DIMM from the socket.

2.6 Installing an expansion card

In the future, you may need to install expansion cards. The motherboard has two PCI, one PCI Express™ x1, and one AGP slots. The following sub-sections describe the slots and the expansion cards that they support.

The system supports **low profile** PCI, PCI Express x1, and AGP cards. You can only install low profile expansion cards on this system. Ask your retailer for details.

2.6.1 Expansion slots

PCI slots

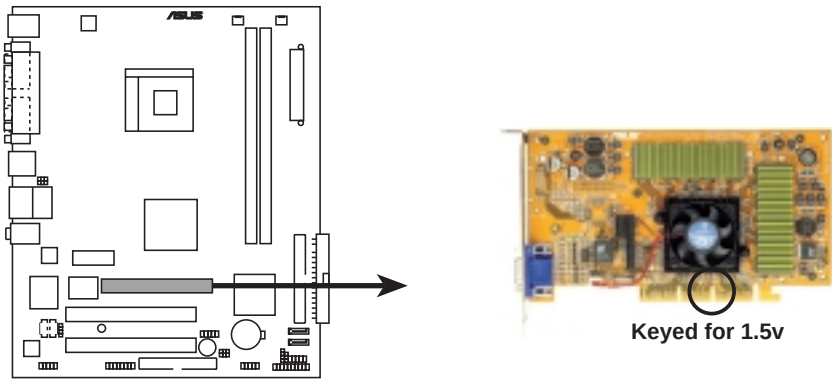
The PCI slots support cards such as a LAN card, SCSI card, USB card, and other cards that comply with PCI specifications.

PCI Express x1 slot

This motherboard supports PCI Express x1 network cards, SCSI cards and other cards that comply with the PCI Express specifications.

AGP slot

The Accelerated Graphics Port (AGP) slot supports AGP8X/4X cards. When you buy an AGP card, make sure that you ask for one with +1.5V specification. Note the notches on the card golden fingers to ensure that they fit the AGP slot on your motherboard.



Accelerated Graphics Port (AGP)

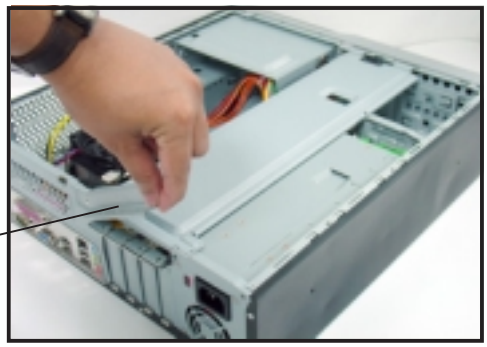
Before installing an expansion card, read the documentation that came with it and make the necessary hardware settings for the card.

2.6.2 Expansion card installation

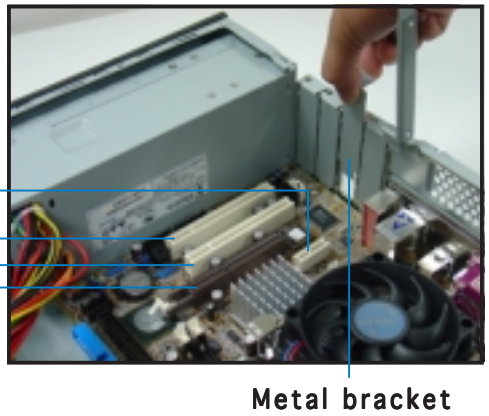
Make sure to unplug the power cord before adding or removing expansion cards. Failure to do so may cause you physical injury and damage the motherboard.

To install an expansion card:

1. Lay the system on its side on a flat and stable surface.
2. Lift the expansion card lock to a 90°-100° angle, then remove the chassis support bracket.

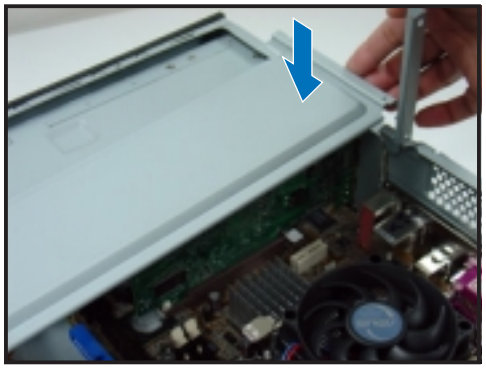


3. Remove the metal cover opposite the slot that you intend to use.



4. Align the card connector with the slot and press firmly until the card is completely seated on the slot.

5. If you have already installed a hard disk drive, replace the chassis support bracket; otherwise, install other components before replacing the chassis support bracket.



6. Replace the expansion card lock to secure the card to the chassis.

Standard interrupt assignments

IRQ	Priority	Standard Function
0	1	System Timer
1	2	Keyboard Controller
2	-	Re-direct to IRQ#9
3	11	Communications Port (COM2)*
4	12	Communications Port (COM1)*
5	13	IRQ holder for PCI steering*
6	14	Floppy Disk Controller
7	15	Printer Port (LPT1)*
8	3	System CMOS/Real Time Clock
9	4	IRQ holder for PCI steering*
10	5	IRQ holder for PCI steering*
11	6	IRQ holder for PCI steering*
12	7	PS/2 Compatible Mouse Port*
13	8	Numeric Data Processor
14	9	Primary IDE Channel
15	10	Secondary IDE Channel

*** These IRQs are usually available for ISA or PCI devices.**

IRQ assignments for this motherboard

	A	B	C	D	E	F	G	H
PCI slot 1	shared	—	—	—	—	—	—	—
PCI slot 2	—	shared	—	—	—	—	—	—
PCI Express x1 slot 1	shared	—	—	—	—	—	—	—
AGP slot	—	—	shared	—	—	—	—	—
Onboard USB controller 0	—	—	—	—	used	—	—	—
Onboard USB controller 1	—	—	—	—	—	used	—	—
Onboard USB controller 2	—	—	—	—	—	—	used	—
Onboard USB 2.0 controller	—	—	—	—	—	—	—	used
Onboard IDE Controller	shared	—	—	—	—	—	—	—
Onboard SATA Controller	—	shared	—	—	—	—	—	—
Onboard LAN	—	—	—	used	—	—	—	—
Onboard Audio	—	—	shared	—	—	—	—	—

When using PCI cards on shared slots, ensure that the drivers support "Share IRQ" or that the cards do not need IRQ assignments; otherwise, conflicts will arise between the two PCI groups, making the system unstable and the card inoperable.

2.7 Installing an optical drive

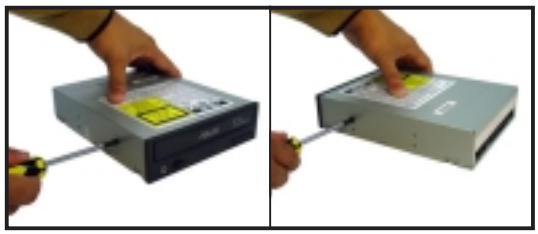
The system comes with a 5.25-inch drive bay for an optical drive.

> If you plan to install an IDE hard disk drive, set the optical drive as a slave device before installing it to the system. Refer to the optical drive documentation for details on how to set the drive as slave device.

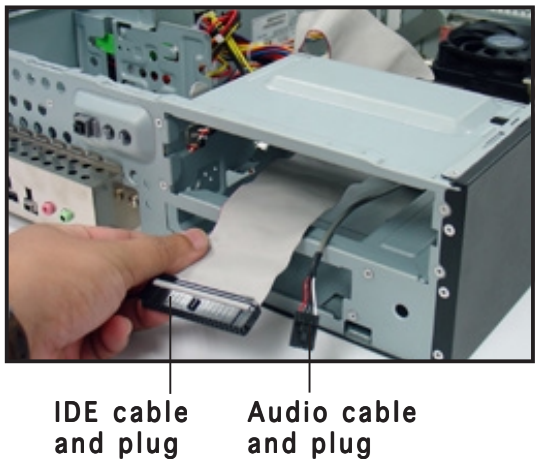
To install an optical drive:

1. Remove the front panel assembly following the instructions in section "2.3.2 Removing the front panel assembly".

2. Drive a screw on the top right screw hole on both sides of the drive. The screw holes are approximately 5 cm from the drive front panel and 2 cm from the drive base.



3. Lay the system on its side in a flat and stable surface.
4. Carefully pull the IDE and audio cables and plugs out from the bay until the cables are long enough to connect to the drive.



5. Connect the IDE cable to the IDE interface at the back of the drive. Match the red stripe on the cable with Pin 1 on the IDE interface.
6. Connect the optical drive audio cable to the 4-pin connector at the back of the optical drive.

The IDE and audio plugs are pre-connected to the primary IDE and internal audio connectors on the motherboard. If you disconnected these plugs, refer to page 4-5 and 4-7 for their respective locations.

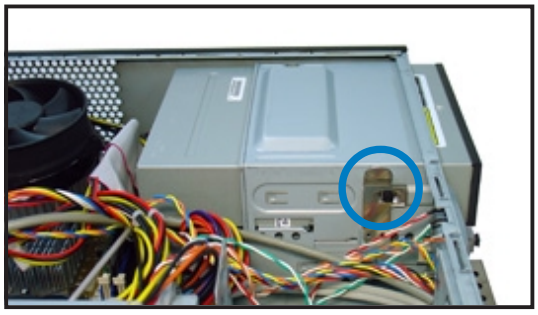
7. Carefully push the optical drive all the way into the bay until the optical drive lock clicks.
8. Connect a 4-pin power plug from the power supply unit to the power connector at the back of the drive.

Uninstalling the optical drive

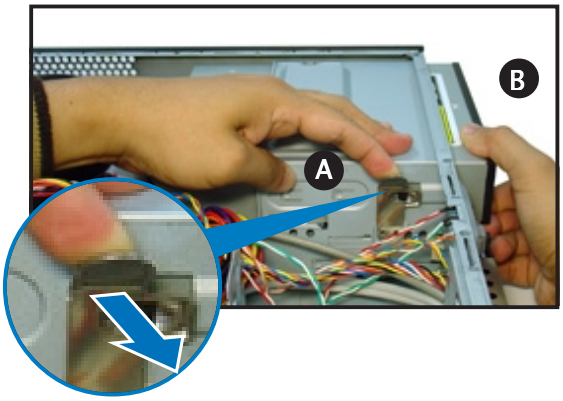
In the future, you may have to upgrade or replace a defective optical drive.

To uninstall the optical drive:

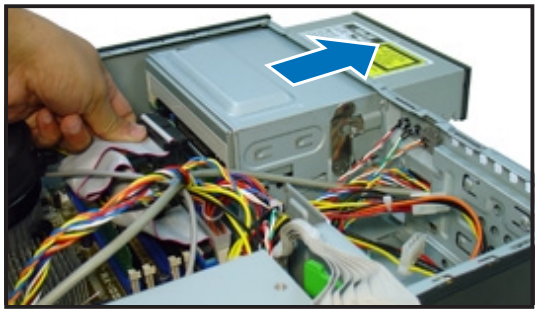
1. Remove the front panel assembly following the instructions in section "2.3.2 Removing the front panel assembly".
2. Locate the optical drive screw lock.



3. Push the lock to release the optical drive screw (A), then slightly pull the drive out from the bay (B).



4. Disconnect the IDE, audio, and power cables and plugs from the back of the drive.
5. Pull out the drive completely from the bay, then replace it following the instructions in the previous section.

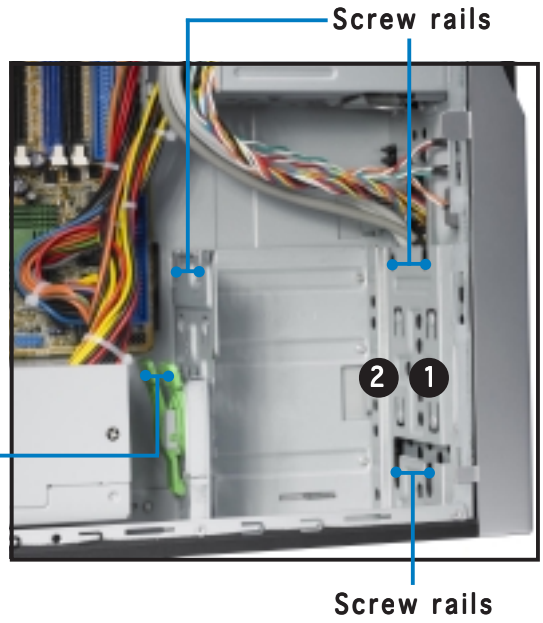


2.8 Installing hard disk drives (HDDs)

The system comes with two 3.5-inch drive bays (labeled 1 and 2) for installation of two Serial ATA hard disk drives or one IDE HDD (if you have installed an optical drive).

2.8.1 Hard disk drive bays

The drive bays incorporate a screw-less design that allows you to install and remove a hard disk drive without driving screws on the chassis. Each drive bay has a HDD screw lock and four screws rails (two on each side of the bay) that trap the HDD screws and secure the drive in the place.

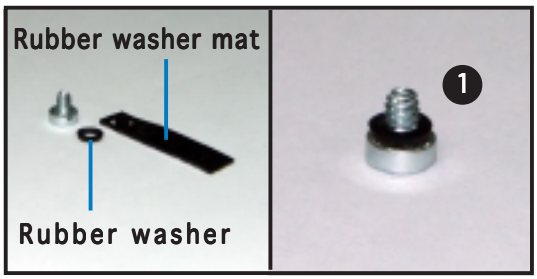


When installing **one** hard disk drive, install it on the upper HDD bay.

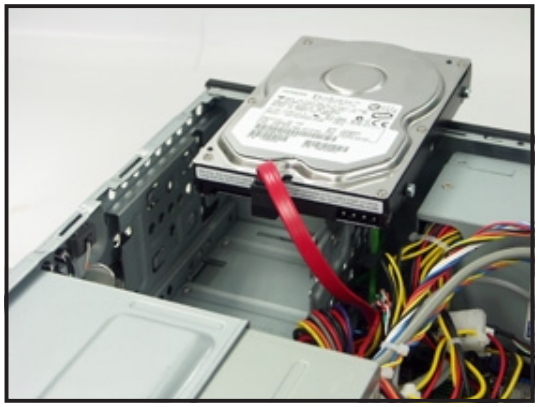
2.8.2 SATA hard disk drive installation

To install a SATA hard disk drive:

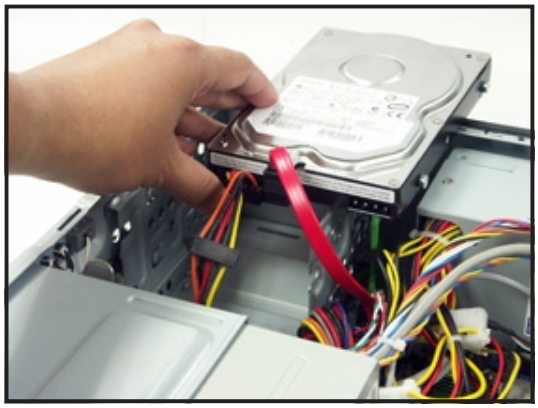
1. Insert the rubber washers to the HDD screws. Refer to the illustration on the right.
2. Drive four screws (two on each side of the drive) on the drive screw holes.



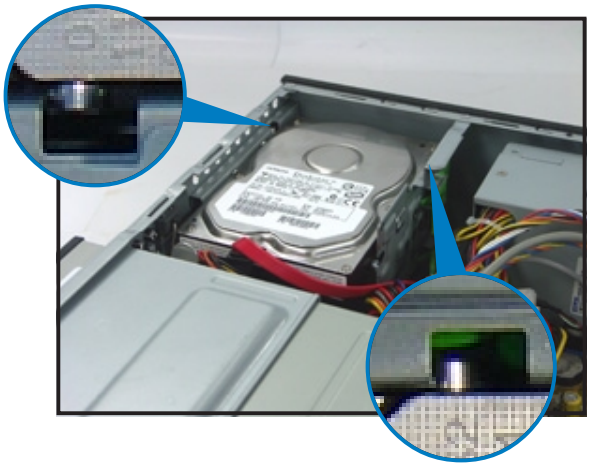
3. Connect one end of the supplied 7-pin SATA cable to the SATA connector at the back of the drive, then connect the other end to a SATA connector on the motherboard. See page 4-6 for the location of the SATA connectors.



4. Connect the 15-pin SATA power plug from the power supply unit to the power connector at the back of the drive.

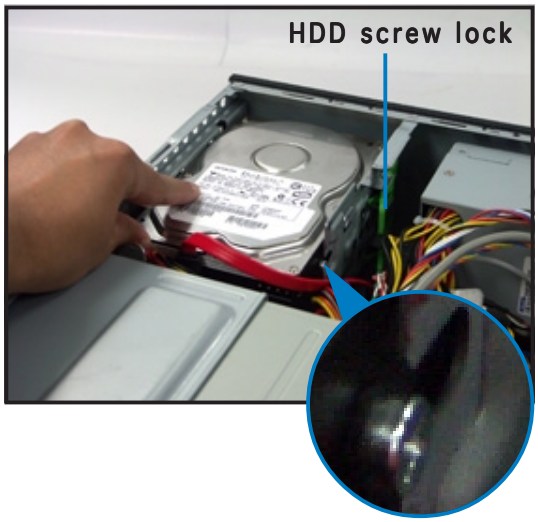


5. Place the HDD on the tray. Make sure that the HDD screws are aligned with the screw holes and rails.



6. When the HDD screws align with the screw rails, push the drive carefully until it is completely flushed on the bay.

   The HDD screw lock clicks to indicate that the drive is properly in place.



2.8.3 IDE hard disk drive installation

Set the IDE HDD as master device before connecting the IDE cable and power plug. Refer to the HDD documentation for details.

To install an IDE hard disk drive:

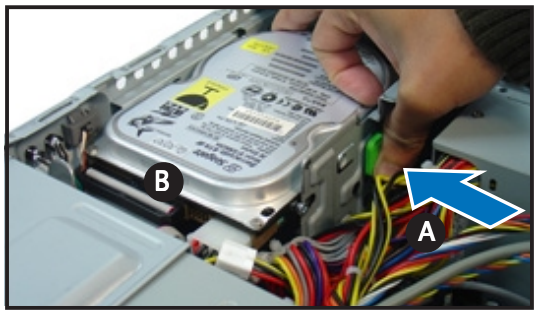
1. Follow steps 1 to 2 of the previous section.
2. Connect the IDE cable (gray connector) to the IDE interface at the back of the drive. Match the red stripe on the cable with Pin 1 on the IDE interface.
3. Connect a power cable from the power supply unit to the power connector at the back of the drive.
4. Follow steps 5 to 6 of the previous section to complete installation.

2.8.4 Uninstalling a hard disk drive

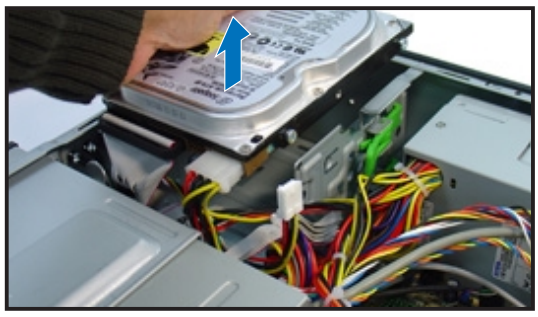
In the future, you may have to upgrade or replace a defective hard disk drive.

To uninstall the hard disk drive:

1. Press the HDD screw lock (A), then push the drive out from the bay (B) until the drive screws are released from the screw rails.



2. Slightly lift the HDD, then remove all plugs at the back of the drive.
3. Install a new HDD following the instructions in the previous section.



2.9 Replacing the covers

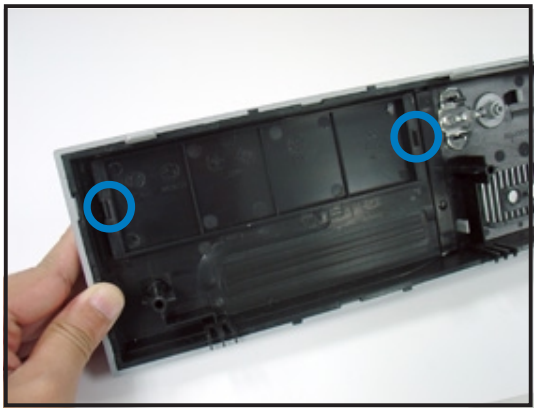
After you install all the necessary components to the system, replace the covers following the instructions in this section.

2.9.1 Replacing the front panel assembly

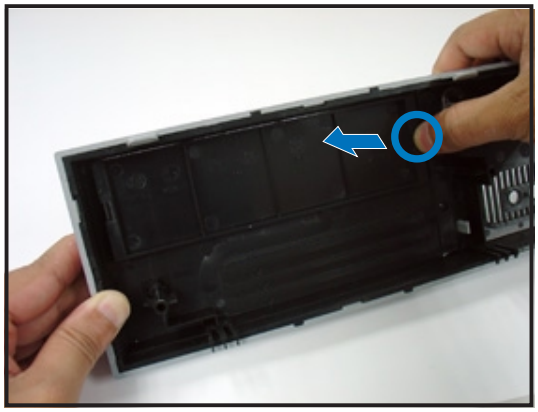
If you installed an optical drive, you must remove the optical drive bay cover before you replace the front panel assembly.

To remove the optical drive bay cover:

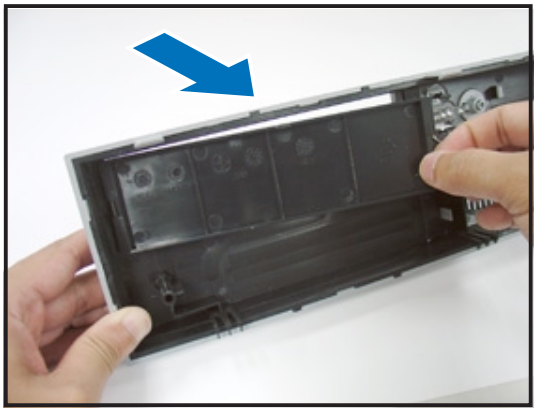
1. Locate the optical drive bay cover hook locks at the back of the front panel assembly.



2. Press one lock inward to disengage the optical drive bay cover from the front panel.



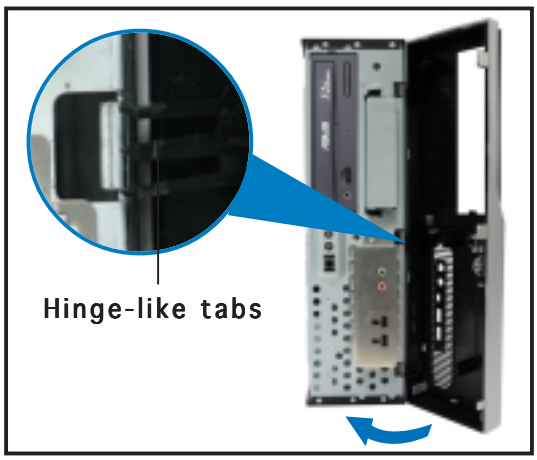
3. Push the optical drive bay cover inward from the front panel assembly to release.



The photo below shows the front panel assembly without the optical drive bay cover.

To replace the front panel assembly:

1. Hook the hinge-like tabs to the holes on the right side of the chassis.



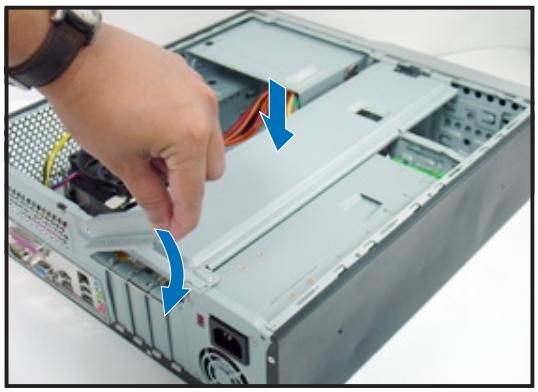
2. Swing the left edge of the front panel inward, then attach the front panel assembly hooks to the chassis until they snap in place.

Do not use too much force when replacing the front panel assembly.

2.9.2 Replacing the system cover

To replace the metal chassis support:

1. Reinstall the metal chassis support and the expansion card lock.



2. Match and insert the hooks of the cover to the elongated holes on the side of the chassis. All eight hooks (four hooks on both sides) of the cover must properly fit the designated holes.

3. Slide the cover to the direction of the front panel until it fits in place.

4. Replace the cover screws.

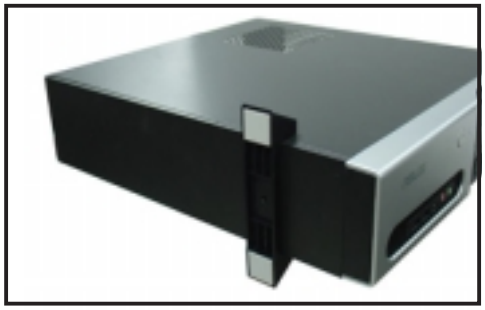
2.10 Installing the foot stands

You need to install the foot stands to place the system vertically on your desktop.

To install the foot stands:

1. Lay the system on its side on a flat, stable, and elevated surface, then locate two screw holes on the left side of the system.
2. Extend the left side of the system at least 3 cm from the edge of surface to facilitate installation.

3. Position the foot stand on the chassis side until their screw holes align.



4. Drive in a screw to secure the footstand to the chassis.
5. Repeat steps 3 to 4 to install the the second foot stand.

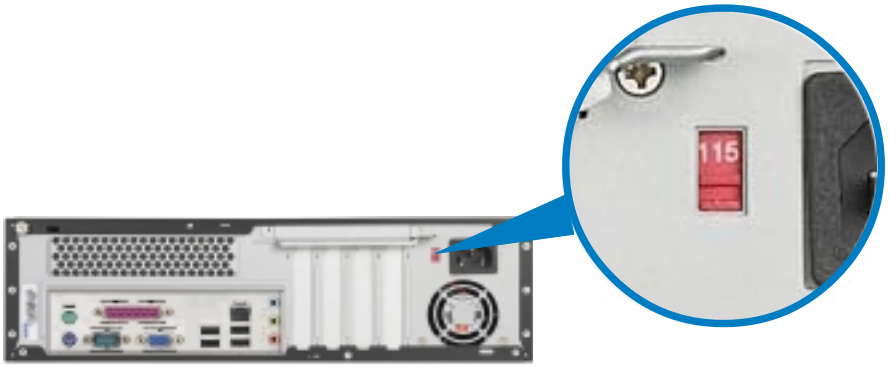
The photo on the right shows the system in a vertical desktop placement.

2.11 Selecting the voltage

The system's power supply unit has a 115 V/230 V voltage selector switch located beside the power connector. Use this switch to select the appropriate system input voltage according to the voltage supply in your area.

If the voltage supply in your area is 100-127 V, set the switch to 115 V.

If the voltage supply in your area is 200-240 V, set the switch to 230 V.

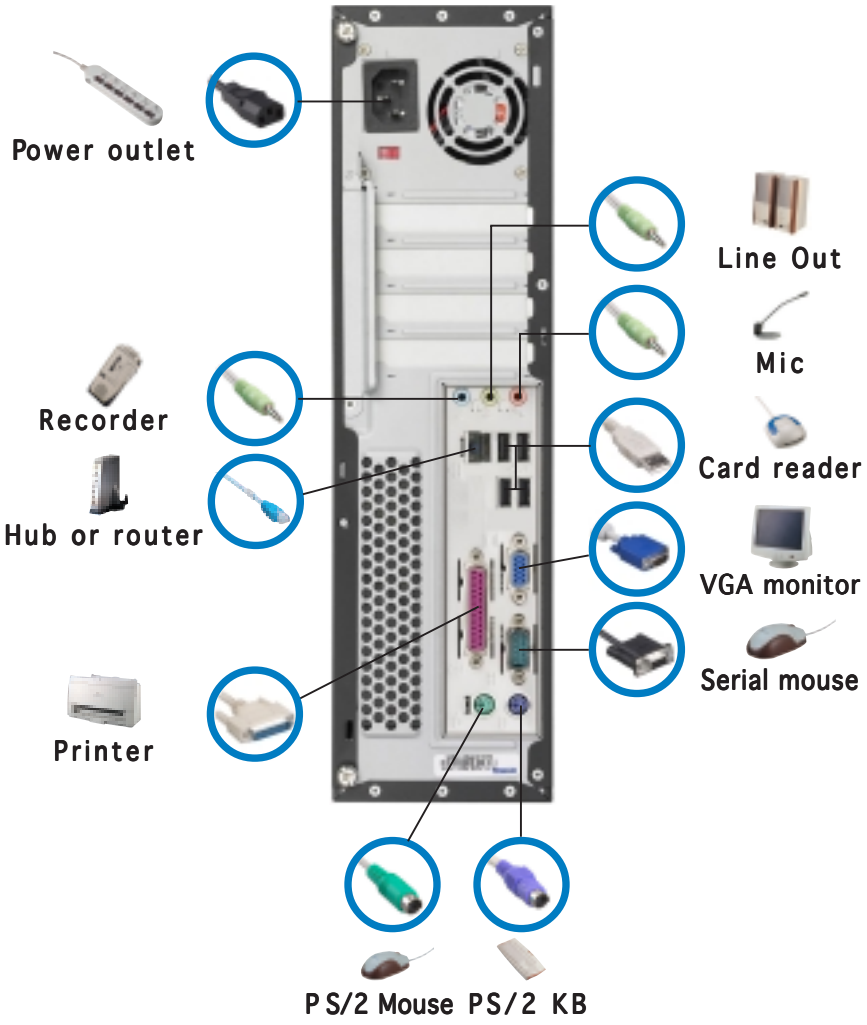


Setting the switch to 115 V in a 230 V environment will seriously damage the system!

2.12 Connecting external devices

2.12.1 To the front panel

2.12.2 To the rear panel



Chapter 3

This chapter helps you power up the system and install drivers and utilities from the support CD.

ASUS Pundit-AE3

Getting started

3.1 Installing an operating system

This system supports Windows® 2000/XP operating systems (OS). Always install the latest OS version and corresponding updates to maximize the features of your system.

- Motherboard settings and hardware options vary. Use the setup procedures presented in this chapter for reference only. Refer to your OS documentation for detailed information.
- Make sure that you install Windows® 2000 Service Pack 4 or the Windows® XP Service Pack 1 or later versions before installing the drivers for better compatibility and system stability.

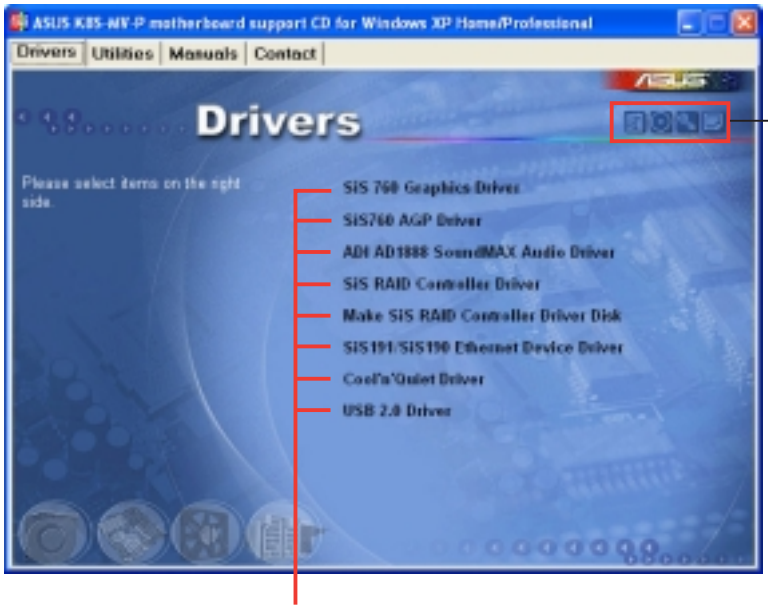
3.2 Support CD information

The support CD that came with the system package contains the drivers, software applications, and utilities that you can install to avail all system features.

The contents of the support CD are subject to change at any time without notice. Visit the ASUS website(www.asus.com) for updates.

3.2.1 Running the support CD

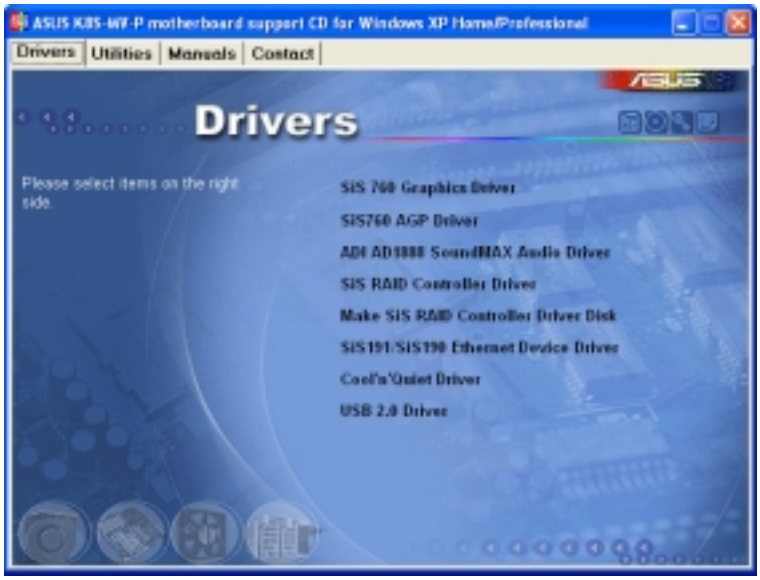
Place the support CD to the optical drive. The CD automatically displays the **Drivers** menu if Autorun is enabled in your computer.



If **Autorun** is NOT enabled in your computer, browse the contents of the support CD to locate the file ASSETUP.EXE from the BIN folder. Double-click the **ASSETUP.EXE** to run the CD.

3.2.2 Drivers menu

The drivers menu shows the available device drivers if the system detects installed devices. Install the necessary drivers to activate the devices.



SiS760 Graphics Driver

Installs the SiS760GX graphics controller driver.

SiS760 AGP Driver

Installs the SiS760 AGP driver.

ADI AD1888 SoundMAX Audio Driver

Installs the ADI1888 audio controller drivers and application.

SiS RAID Controller Driver

Installs the SIS RAID controller driver.

Make SiS RAID Controller Driver Disk

Creates a SIS RAID Controller driver disk.

SiS191/SiS190 Ethernet Device Driver

Installs the SiS191/SiS190 LAN drivers for 10/100 LAN solution that provides up to 100 Mbps data transfer rates.

Cool ‘n’ Quiet Driver

Installs the AMD Cool ‘n’ Quiet! Technology drivers.

USB 2.0 Driver

Installs the USB 2.0 driver.

3.2.3 Utilities menu

The Utilities menu shows the applications and other software that the motherboard supports.

ASUS Cool 'n' Quiet Software

Installs the ASUS Cool 'n' Quiet software application. See page 3-13.

ASUS PC Probe II

This smart utility monitors the fan speed, CPU temperature, and system voltages, and alerts you of any detected problems. This utility helps you keep your computer in healthy operating condition. See the online help for details.

ASUS Update

The ASUS Update utility allows you to update the motherboard BIOS in a Windows® environment. This utility requires an Internet connection either through a network or an Internet Service Provider (ISP). See page 5-3 for details.

Microsoft DirectX 9.0c

Installs the Microsoft® DirectX 9.0c driver.

Anti-Virus Utility

The anti-virus application scans, identifies, and removes computer viruses. View the online help for detailed information.

ADOBE Acrobat Reader

Installs the Adobe® Acrobat® Reader V5.0.

ASUS Screen Saver

Installs the ASUS screen saver.

3.2.4 ASUS contact information

Click the **Contact** tab to display the ASUS contact information. You can also find this information on the inside front cover of this user guide.

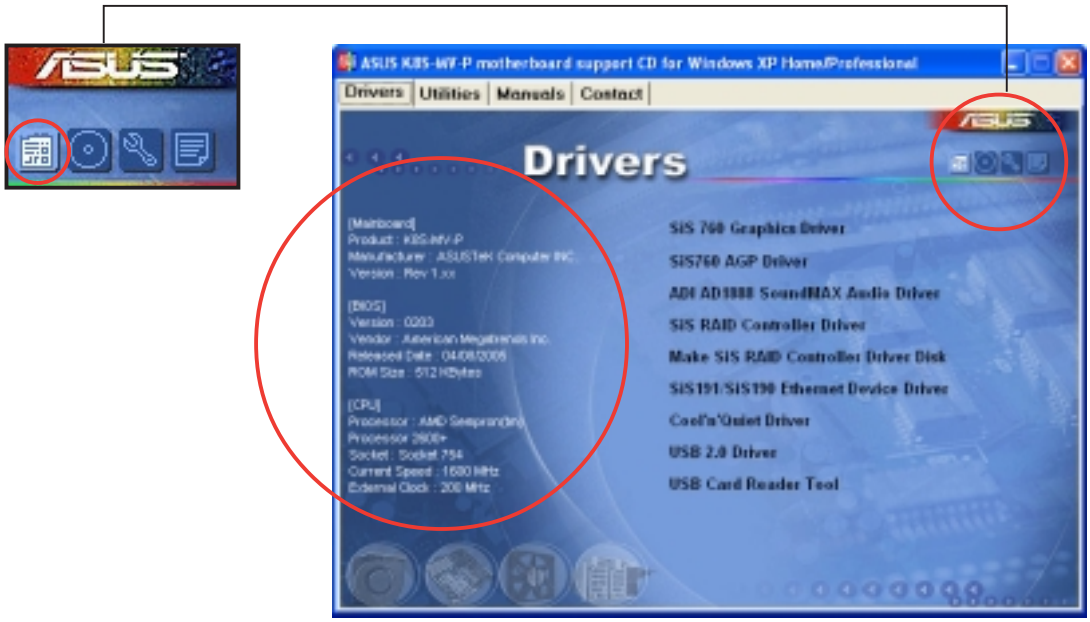
The screen display and drivers option may not be the same for different operating system versions.

3.2.5 Other information

The icons on the top right corner of the screen give additional information on the motherboard and the contents of the support CD. Click an icon to display the specified information.

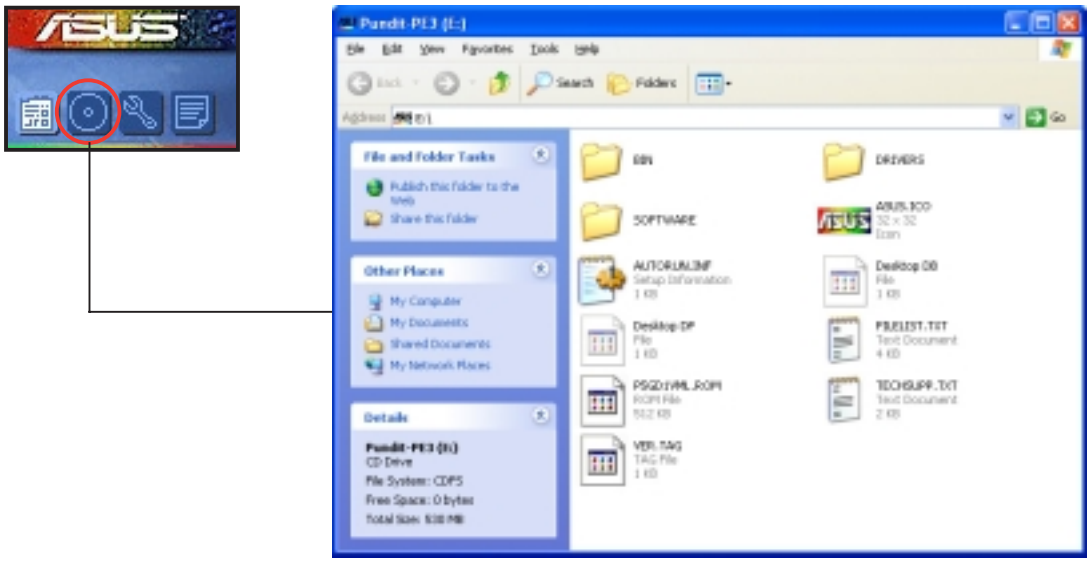
Motherboard Info

Displays the general specifications of the motherboard.



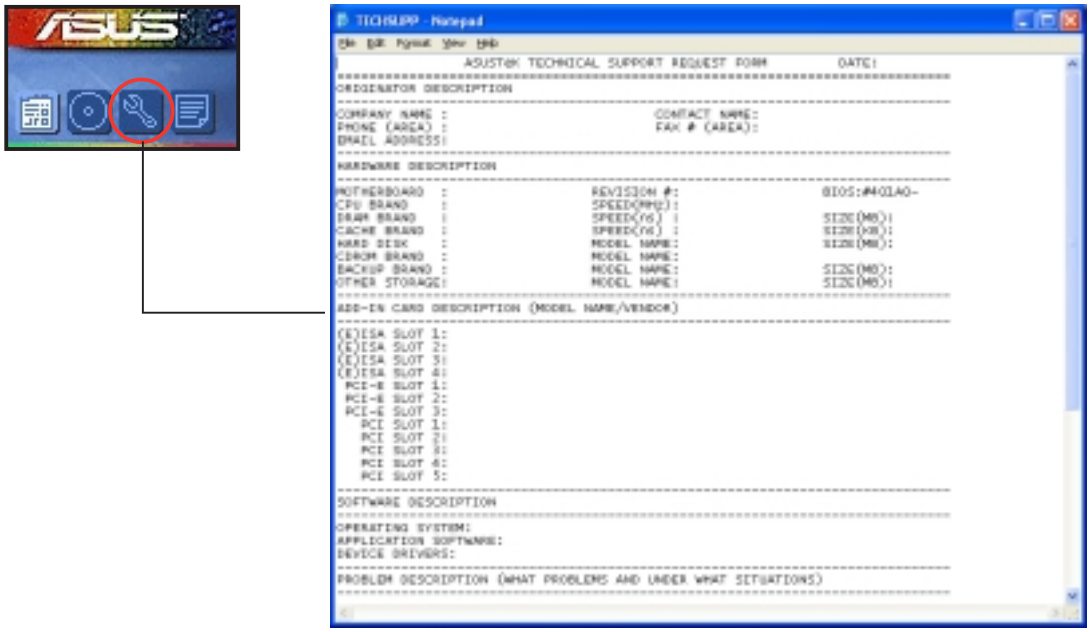
Browse this CD

Displays the support CD contents in graphical format.



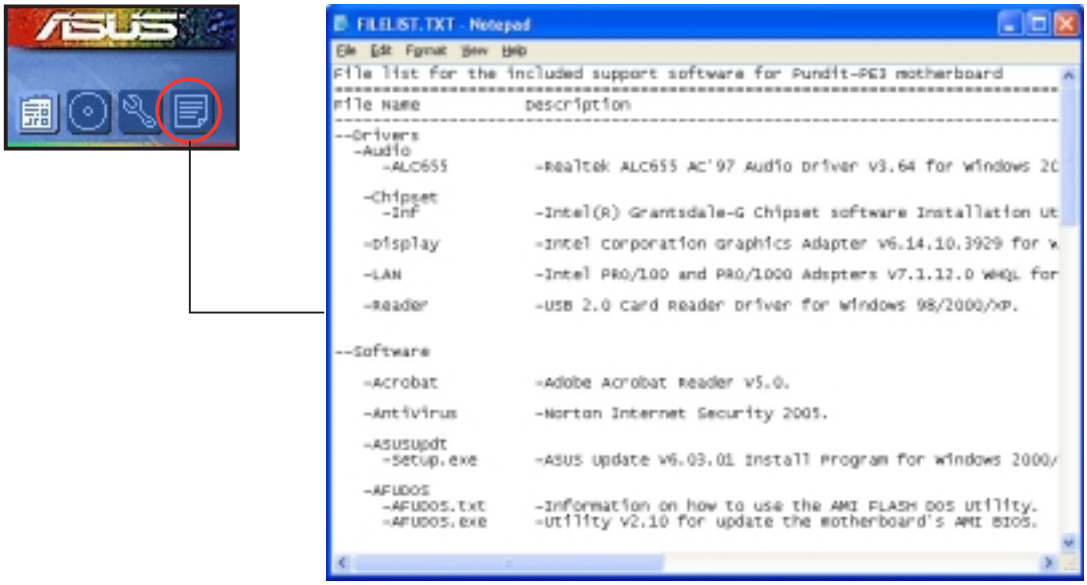
Technical support form

Displays the ASUS Technical Support Request Form that you have to fill out when requesting technical support.



Filelist

Displays the contents of the support CD and a brief description of each in text format.



3.3 Software information

3.3.1 SoundMAX® 4 XL software

The ADI AD1888 AC '97 audio CODEC provides 6-channel audio capability through the SoundMAX® 4 XL with AudioESP™ software to deliver you the ultimate audio experience. The software implements high quality audio synthesis/rendering, 3D sound positioning, and advanced voice-input technologies.

Install the **SoundMAX® Audio Driver and Application** from the support CD that came with the system package to activate the 6-channel audio feature.

- You must use 4-channel or 6-channel speakers for this setup.
- SoundMAX® 4 XL requires Microsoft® Windows® 2000/ XP. Make sure that one of these operating systems is installed before installing SoundMAX®.

If the SoundMAX® 4 XL software is correctly installed, you will find the SoundMAX® 4 XL icon on the taskbar.

SoundMAX® 4 XL icon

From the taskbar, double-click on the **SoundMAX® 4 XL** icon to display the **SoundMAX® Control Panel**.

Using the Audio Wizard

The Audio Wizard helps you set up the speaker, microphone, and other aduio settings for optimal audio performance.

To configure the speakers and microphone using the Audio Wizard:

1. Click the wizard icon from the SoundMAX® control panel. The Audio Wizard initial window appears.

You can also launch the wizard by clicking the **Configuration** button when AudioESP detects and verifies a newly connected peripheral.

2. Click **Next**.

3. Select the speaker configuration from the drop-down list. Select **5.1 Speakers** if you have a 6-channel audio system.

   The jack configuration illustration specifies the correct audio speakers connection.

4. Click **Next**.

5. Adjust a speaker volume, then click **Test** to listen to your configuration.

6. Click **Next** when finished.

7. Adjust the microphone volume, then click **Test** to listen to your configuration.

8. Click **Next** when finished.
9. After adjusting the audio settings, click **Finish** to exit the Audio Wizard.

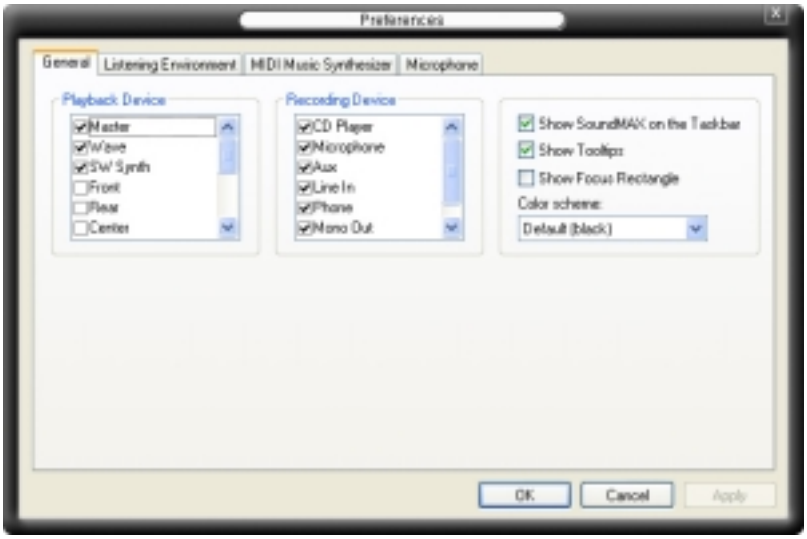
The microphone volume screen is disabled when you select a 5.1 speaker configuration.

Changing the audio settings

You can change the general audio, listening environment, synthesizer, and microphone settings using the Preferences window of the SoundMAX application.

To change the audio settings using the Preferences window:

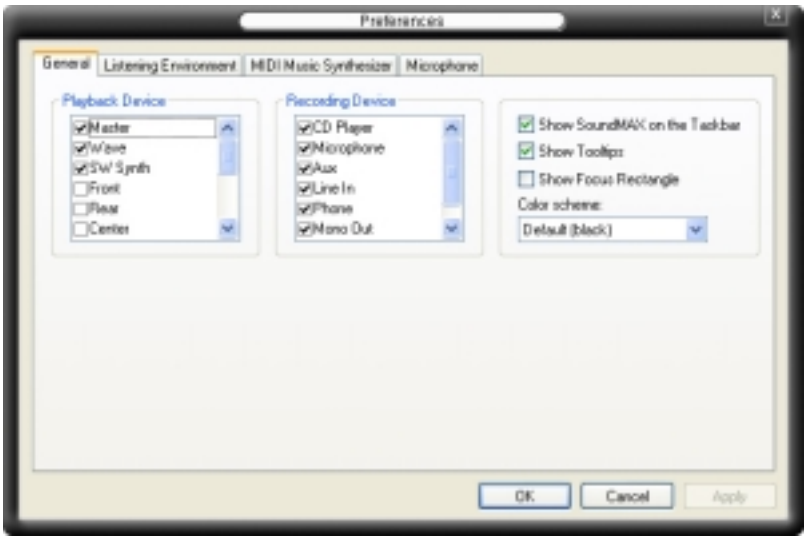
1. Click the Preferences icon from the SoundMAX® control panel. The Preferences window appears.



2. Click a tab (General, Listening environment, MIDI Music Synthesizer, Microphone) to display the audio settings and preferences.

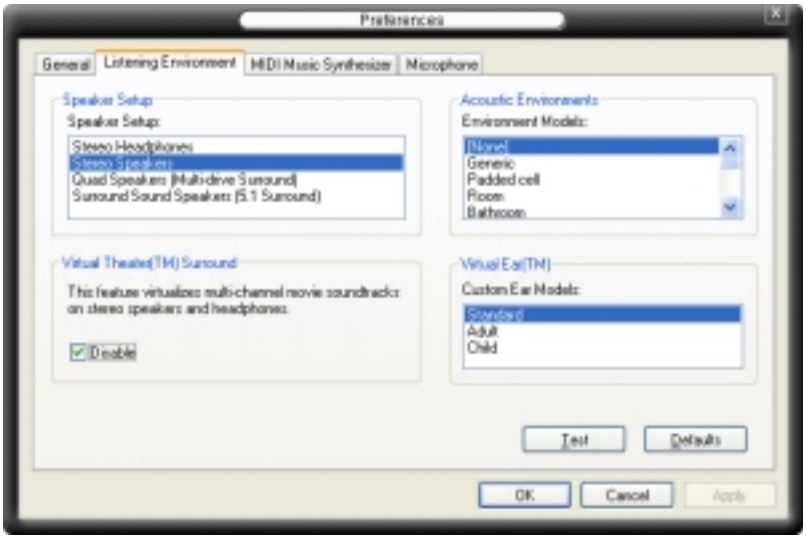
General

The **General** tab allows you to select and adjust the playback and recording devices, and the SoundMAX application preferences.



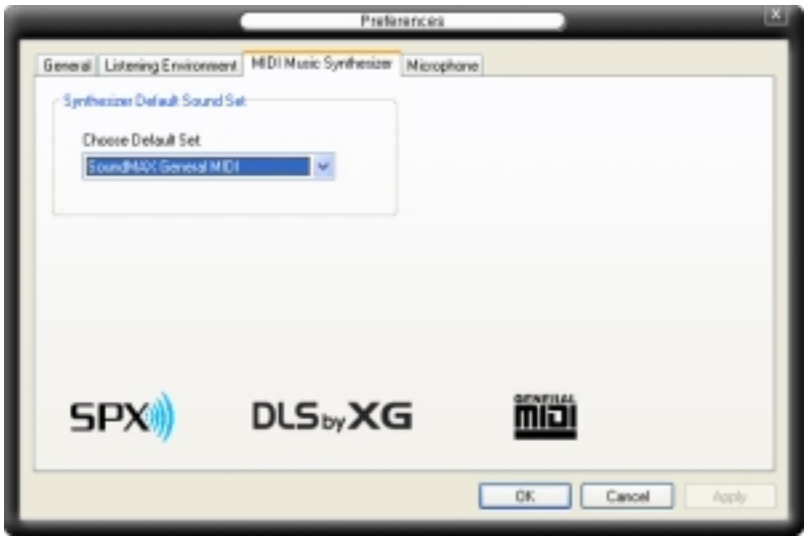
Listening Environment

The **Listening Environment** tab allows you to select the speaker setup, set the acoustic environment, enable the Virtual Theater(TM) Surround feature, and set the VirtualEar(TM) mode.



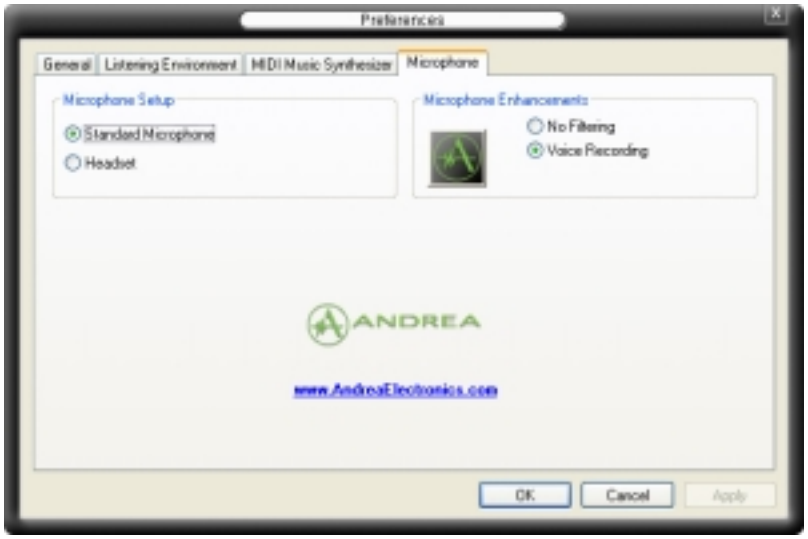
MIDI Music Synthesizer

The **MIDI Music Synthesizer** tab allows you to set the MIDI and synthesizer settings for your selected audio configuration.



Microphone

The **Microphone** tab allows you to select the microphone setup and environment.



3.3.2 ASUS PC Probe II

PC Probe II is a utility that monitors the computer's vital components, and detects and alerts you of any problem with these components. PC Probe II senses fan rotations, CPU temperature, and system voltages, among others. The PC Probe II is available from the support CD that came with your system package. Refer to page 3-4 for installation details.

Launching PC Probe II

You can launch the PC Probe II right after installation or anytime from the Windows® desktop.

To launch the PC Probe II from the Windows® desktop, click **Start** > **All Programs** > **ASUS** > **PC Probe II**. The PC Probe II main window appears.

After launching the application, the PC Probe II icon appears in the Windows® taskbar. Click this icon to close or restore the application.

Using PC Probe II

Main window

The PC Probe II main window allows you to view the current status of your system and change the utility configuration. By default, the main window displays the **Preference** section. You can close or restore the **Preference** section by clicking on the triangle on the main window right handle.

Button	Function
CONFIG	Opens the **Configuration** window
	Opens the **Report** window
DMI	Opens the **Desktop Management Interface** window
PCI	Opens the **Peripheral Component Interconnect** window
WMI	Opens the **Windows Management Instrumentation** window
USAGE	Opens the hard disk drive, memory, CPU usage window
	Shows/Hides the **Preference** section
	Minimizes the application
	Closes the application

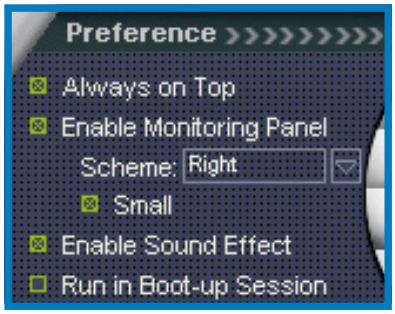
Sensor alert

When a system sensor detects a problem, the main window right handle turns red. Refer to the illustration below.

When displayed, the monitor panel for that sensor also turns red. Refer to the **Monitor panels** section for details.

Preferences

You can customize the application using the Preference section in the main window. Click the box before each preference to activate or deactivate. Refer to the table below.



Preference	When checked
Always on top	the utility main window always appear on top of all opened windows
Enable Monitoring Panel	the utility displays large (hexagonal) or small (rectangular) monitor panels for system sensors. See the next section for details
Enable Sound Effect	the utility plays a sound everytime you click a button on the interface
Run in Boot up Session	the utility launches automatically everytime the computer starts

Refer to the online help file for detailed information on the application preferences and configuration.

Hardware monitor panels

The hardware monitor panels display the current value of a system sensor such as fan rotation, CPU temperature, and voltages.

The hardware monitor panels come in two display modes: hexagonal (large) and rectangular (small). When you check the **Enable Monitoring Panel** option from the **Preference** section, the monitor panels appear on your computer's desktop.

Large display

Small display

Changing the monitor panels position

To change the position of the monitor panels in the desktop, click the arrow down button of the **Scheme** options, then select another position from the list box. Click **OK** when finished.

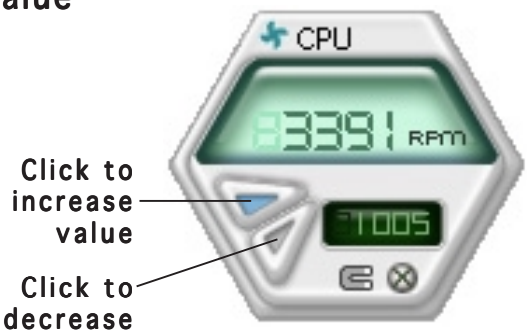
Moving the monitor panels

All monitor panels move together using a magnetic effect. If you want to detach a monitor panel from the group, click the horseshoe magnet icon. You can now move or reposition the panel independently.

Adjusting the sensor threshold value

You can adjust the sensor threshold value in the monitor panel by clicking the or buttons. You can also adjust the threshold values using the **Config** window.

You cannot adjust the sensor threshold values in a small monitoring panel.



Monitoring sensor alert

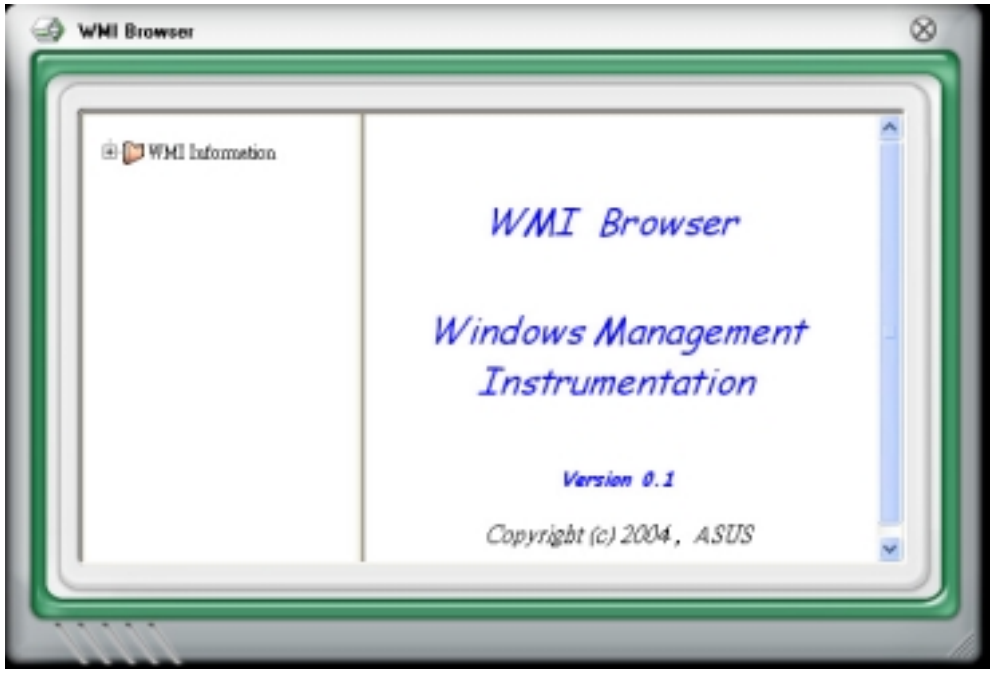
The monitor panel turns red when a component value exceeds or is lower than the threshold value. Refer to the illustrations below.

Large display

Small display

WMI browser

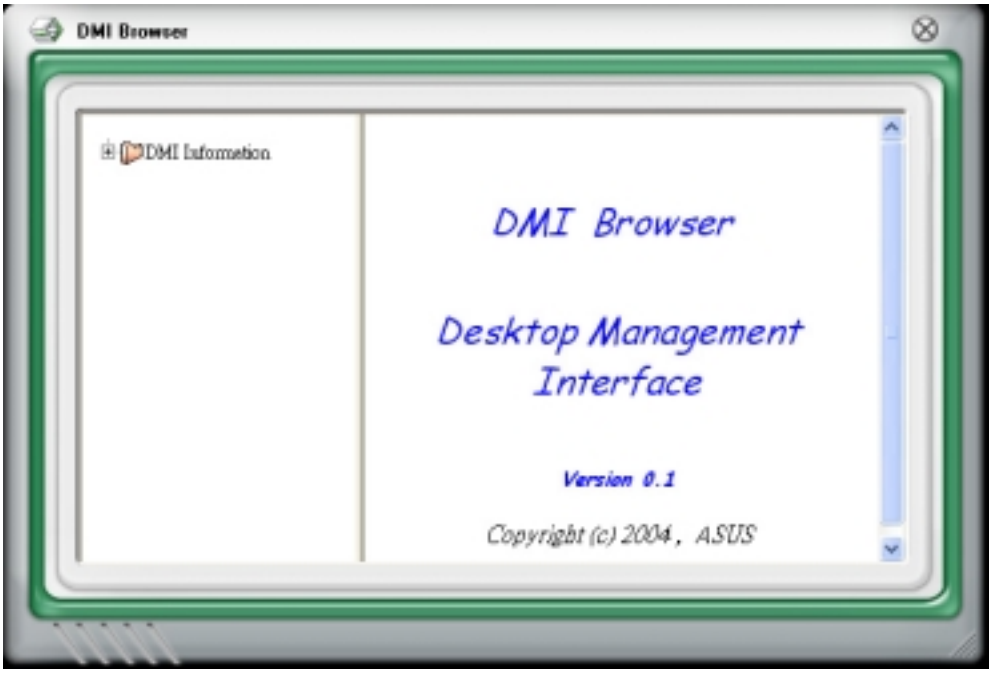
Click WMI to display the WMI (Windows Management Instrumentation) browser. This browser displays various Windows® management information. Click an item from the left panel to display on the right panel. Click the plus sign (+) before **WMI Information** to display the available information.



You can enlarge or reduce the browser size by dragging the bottom right corner of the browser.

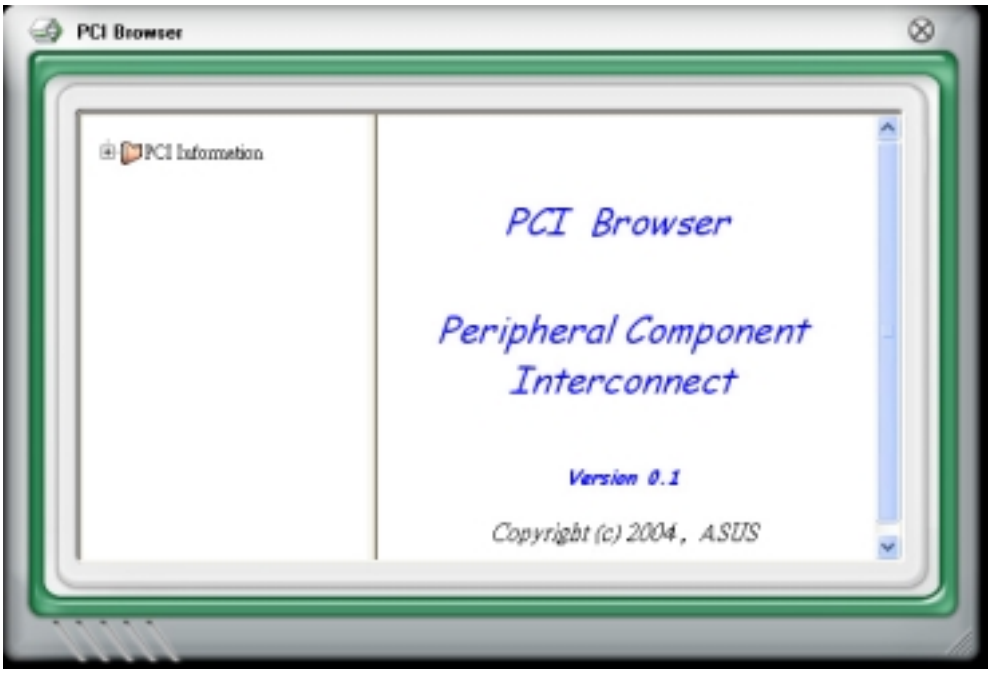
DMI browser

Click DMI to display the DMI (Desktop Management Interface) browser. This browser displays various desktop and system information. Click the plus sign (+) before **DMI Information** to display the available information.



PCI browser

Click PCI to display the PCI (Peripheral Component Interconnect) browser. This browser provides information on the PCI devices installed on your system. Click the plus sign (+) before the **PCI Information** item to display available information.

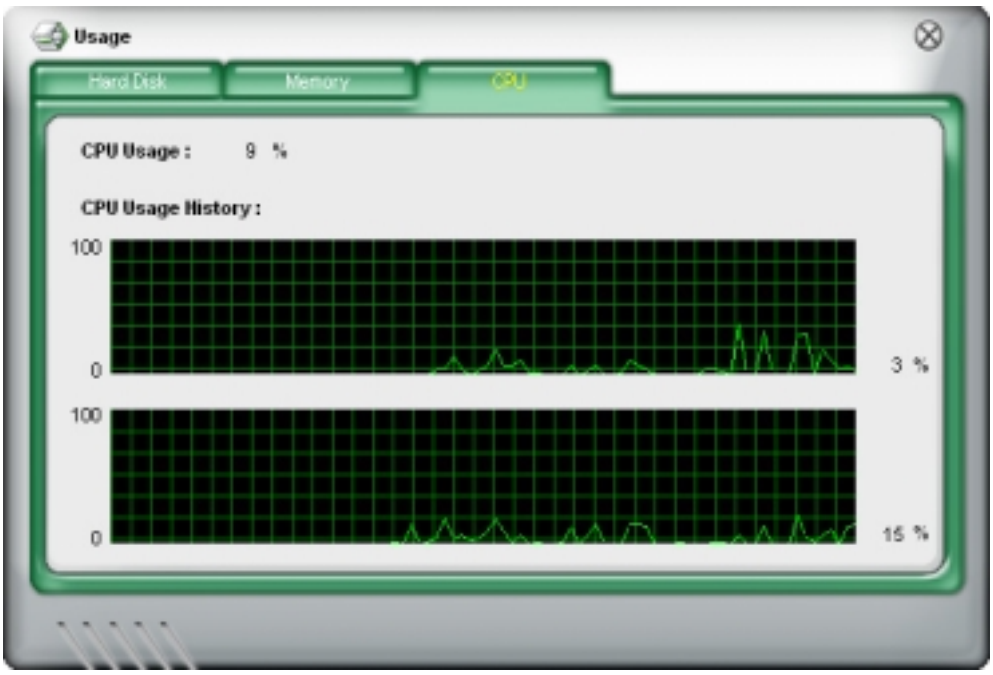


Usage

The **Usage** browser displays real-time information on the CPU, hard disk drive space, and memory usage. Click USAGE to display the Usage browser.

CPU usage

The **CPU** tab displays real-time CPU usage in line graph representation. If the CPU has an enabled Hyper-Threading*, two separate line graphs display the operation of the two logical processors.



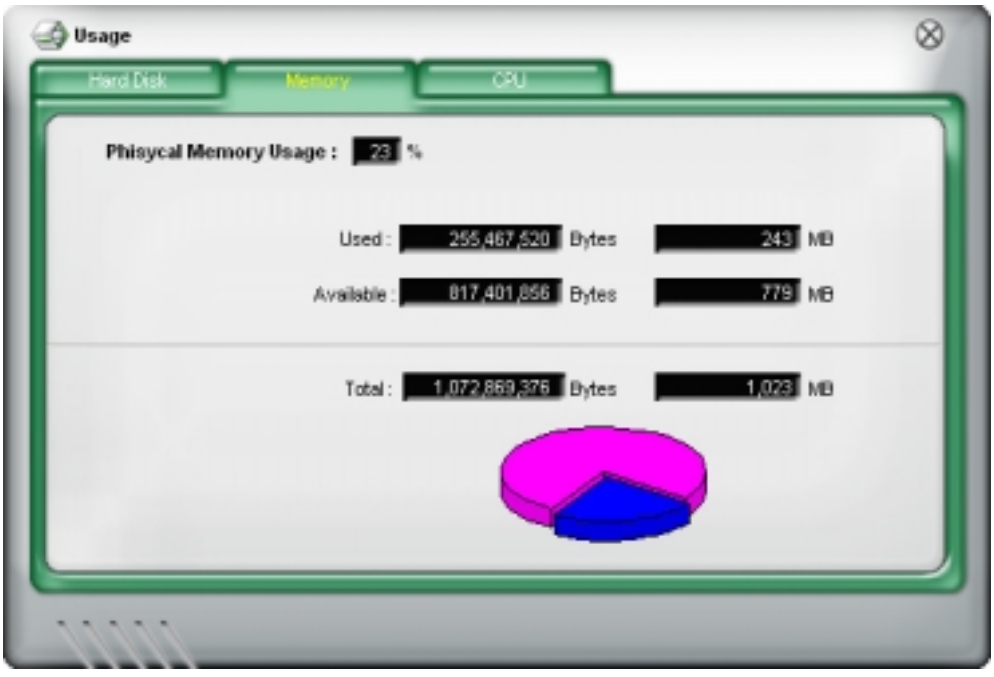
*On Intel® CPUs only.

Hard disk drive space usage

The **Hard Disk** tab displays the used and available hard disk drive space. The left panel of the tab lists all logical drives. Click a hard disk drive to display the information on the right panel. The pie chart at the bottom of the window represents the used (blue) and the available HDD space.

Memory usage

The Memory tab shows both used and available physical memory. The pie chart at the bottom of the window represents the used (blue) and the available physical memory.



3.3.3 Cool ‘n’ Quiet!™ Technology

- Make sure to install the Cool ‘n’ Quiet!™ driver and application before using this feature.
- The AMD Cool ‘n’ Quiet!™ technology supports AMD Athlon™ XP and higher processors only.

The system motherboard supports the AMD Cool ‘n’ Quiet!™ Technology that dynamically and automatically change the CPU speed, voltage, and amount of power depending on the CPU loading.

Enabling Cool ‘n’ Quiet!™ Technology

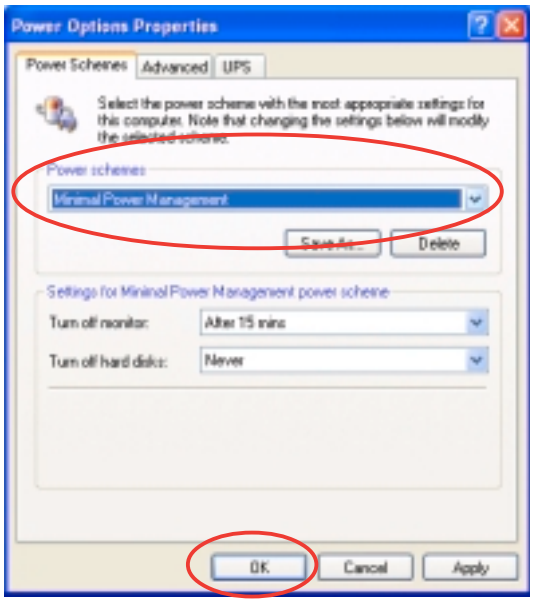
To enable Cool ‘n’ Quiet!™ Technology:

1. Turn on the system and enter BIOS by pressing the <Del> key during the Power On Self-Tests (POST).
2. Go to the **Advanced** menu, then set the **Cool ‘n’ Quiet** item to **Enabled**. See section “5.4 Advanced Menu” for details.
3. Go to the **Power** menu, then set the **ACPI 2.0 Support** item to **Yes**. See section “5.5 Power Menu” for details.
4. Save your changes, then exit the BIOS Setup.
5. Set the **Power Option Properties** depending on the operating system. Refer to the next section for details.

Setting the power options

Windows® 2000/XP

1. From the Windows® 2000/XP operating system, click the **Start** button. Select **Settings**, then **Control Panel**.
2. Make sure the Control Panel is set to Classic View.
3. Double-click the **Display** icon in the Control Panel then select the **Screen Saver** tab.
4. Click the **Power...** button. The following dialog box appears.
5. From the **Power schemes** combo list box, select **Minimal Power Management**.
6. Click **OK** to effect settings.



Launching the Cool ‘n’ Quiet!™ application

The motherboard support CD includes the Cool ‘n’ Quiet!™ software application that enables you to view your system’s real-time CPU frequency and core voltage.

Make sure to install the Cool ‘n’ Quiet!™ software from the motherboard support CD. Refer to section “3.2.3 Utilities menu”, for details.

To launch the Cool ‘n’ Quiet!™ application:

Windows® XP OS

1. Click the **Start** button.
2. Select **All Programs > ASUS > Cool & Quiet > Cool & Quiet.**

The Cool ‘n’ Quiet!™ application window appears and displays the current CPU frequency and core voltage. Click **(X)** to close the window or **(–)** to minimize.

Chapter 4

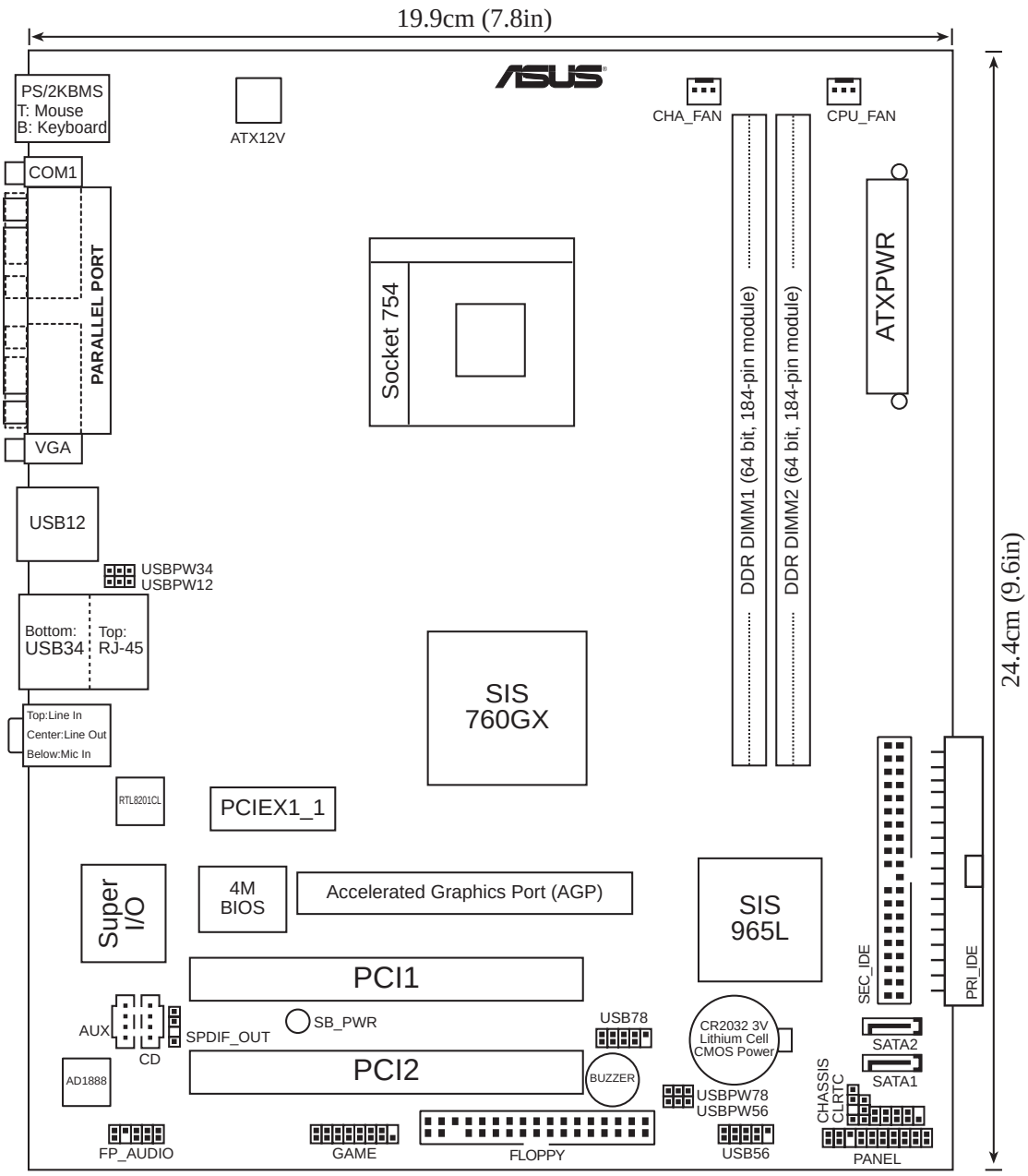
This chapter gives information about the motherboard that comes with the system. This chapter includes the motherboard layout, jumper settings, and connector locations.

ASUS Pundit-AE3

Motherboard info

4.1 Motherboard overview

Motherboard layout



4.2 Jumpers

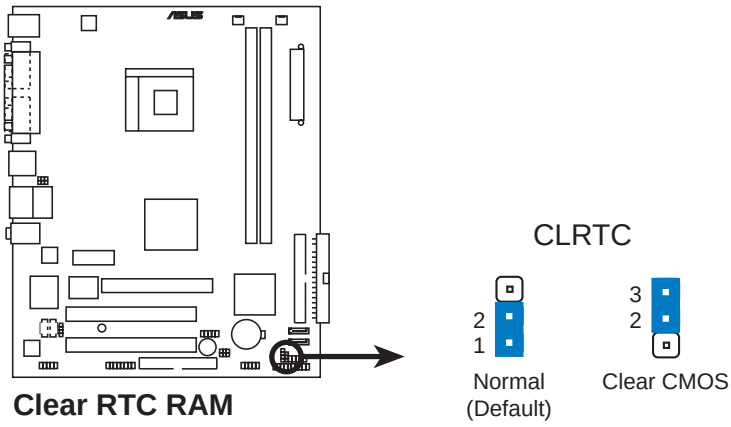
1. Clear RTC RAM (CLRTC1)

This jumper allows you to clear the Real Time Clock (RTC) RAM in CMOS. You can clear the CMOS memory of date, time, and system setup parameters by erasing the CMOS RTC RAM data. The onboard button cell battery powers the RAM data in CMOS, which include system setup information such as system passwords.

To erase the RTC RAM:

1. Turn OFF the computer and unplug the power cord.
2. Remove the onboard battery.
3. Move the jumper cap from pins 1-2 (default) to pins 2-3. Keep the cap on pins 2-3 for about 5~10 seconds, then move the cap back to pins 1-2.
4. Reinstall the battery.
5. Plug the power cord and turn ON the computer.
6. Hold down the <Del> key during the boot process and enter BIOS setup to re-enter data.

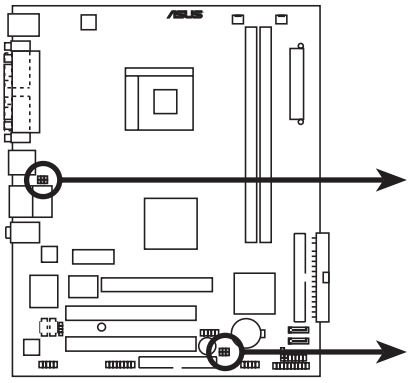
Except when clearing the RTC RAM, never remove the cap on CLRTC jumper default position. Removing the cap will cause system boot failure!



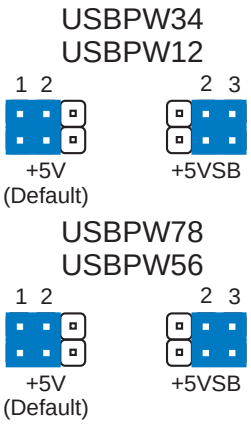
Clear RTC RAM

2. USB device wake-up (3-pin USBPW12, USBPW34, USBPW56, USBPW78)

Set these jumpers to +5V to wake up the computer from S1 sleep mode (CPU stopped, DRAM refreshed, system running in low power mode) using the connected USB devices. Set to +5VSB to wake up from S3 and S4 sleep modes (no power to CPU, DRAM in slow refresh, power supply in reduced power mode).



USB device wake-up



- The USB device wake-up feature requires a power supply that can provide 500mA on the +5VSB lead for each USB port; otherwise, the system will not power up.
- The total current consumed must NOT exceed the power supply capability (+5VSB) whether under normal condition or in sleep mode.

4.3 Connectors

4.3.1 Rear panel connectors

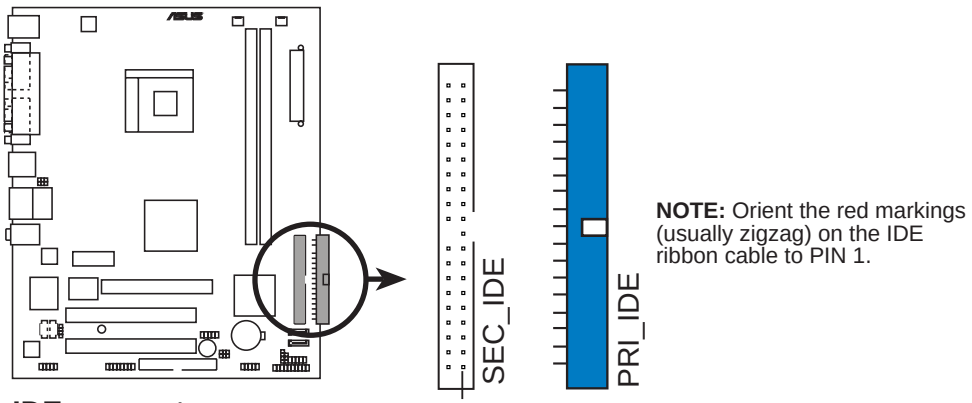
Refer to section “1.3 Rear panel” for a description of the rear panel I/O ports.

4.3.2 Internal connectors

1. IDE connectors (40-1 pin PRI_IDE, SEC_IDE)

These connectors are for Ultra DMA 100/66/33 signal cables. The Ultra DMA 100/66/33 signal cable has three connectors: a blue connector for the primary IDE connector on the motherboard, a black connector for an Ultra DMA 100/66/33 IDE slave device (optical drive/ hard disk drive), and a gray connector for an Ultra DMA 100/66/33 IDE master device (hard disk drive). If you install an optical drive and an IDE HDD, you must configure the optical drive as a slave device by setting its jumper accordingly. Refer to the optical drive or HDD documentation for the jumper settings.

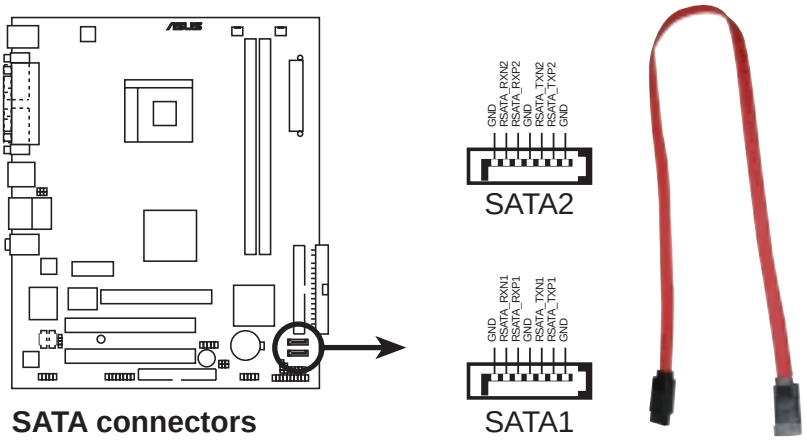
- Pin 20 on the IDE connector is removed to match the covered hole on the Ultra DMA cable connector. This prevents incorrect insertion when you connect the IDE cable.
- Use the 80-conductor IDE cable for Ultra DMA 100/66/33 IDE devices.



IDE connectors

2. Serial ATA connectors (7-pin SATA1, SATA2)

These connectors are for the Serial ATA signal cables for Serial ATA hard disk drives.



SATA connectors

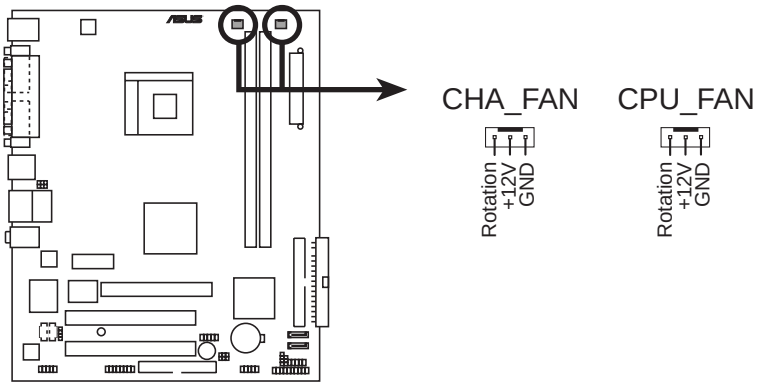
Important notes on Serial ATA

- You must install Windows® 2000 Service Pack 4 or the Windows® XP Service Pack1 before using Serial ATA hard disk drives.
- When using the connectors in standard IDE mode, you can connect the primary (boot) hard disk drive to any of the SATA connectors.

3. CPU and Chassis fan connectors (4-pin CPU_FAN, 3-pin CHA_FAN)

The fan connectors support cooling fans of 350 mA~740 mA (8.88 W max.) or a total of 1 A~2.22 A (26.64 W max.) at +12V. Connect the fan cables to the fan connectors on the motherboard, making sure that the black wire of each cable matches the ground pin of the connector.

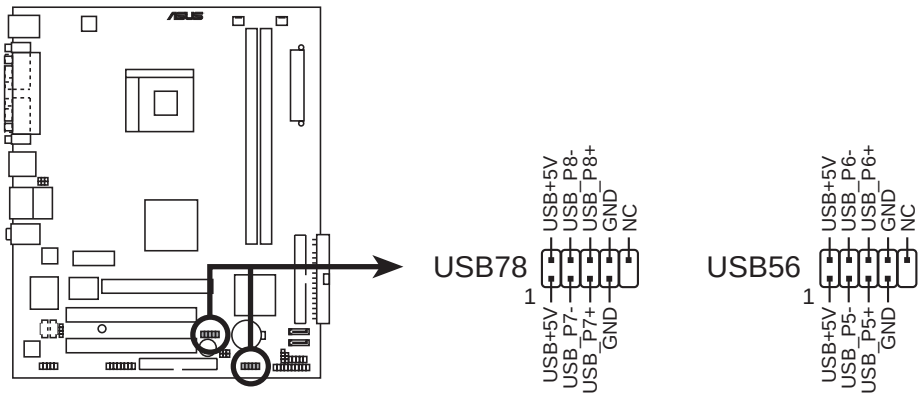
Do not forget to connect the fan cables to the fan connectors. Insufficient air flow inside the system may damage the motherboard components. These are not jumpers! Do not place jumper caps on the fan connectors!



Fan connectors

4. USB connectors (10-1 pin USB56, USB78)

These connectors support the front panel USB ports and additional USB ports using a USB port module. These USB connectors comply with USB 2.0 specification that supports up to 480 Mbps connection speed.

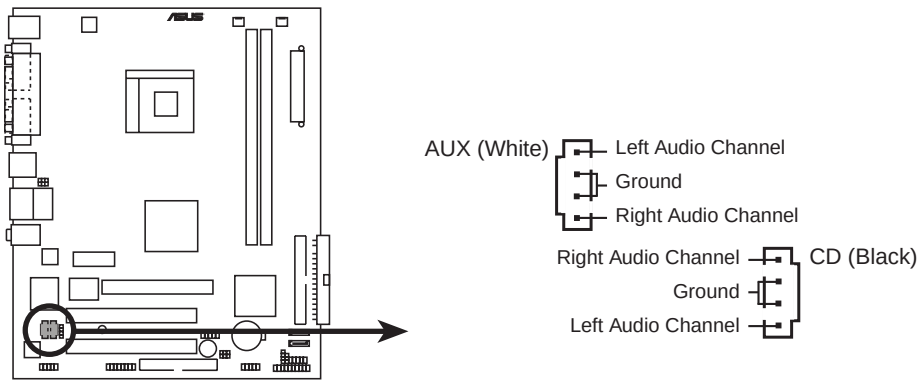


USB 2.0 connectors

Never connect a 1394 cable to the USB connectors. Doing so will damage the motherboard!

5. Internal audio connectors (4-pin CD, AUX)

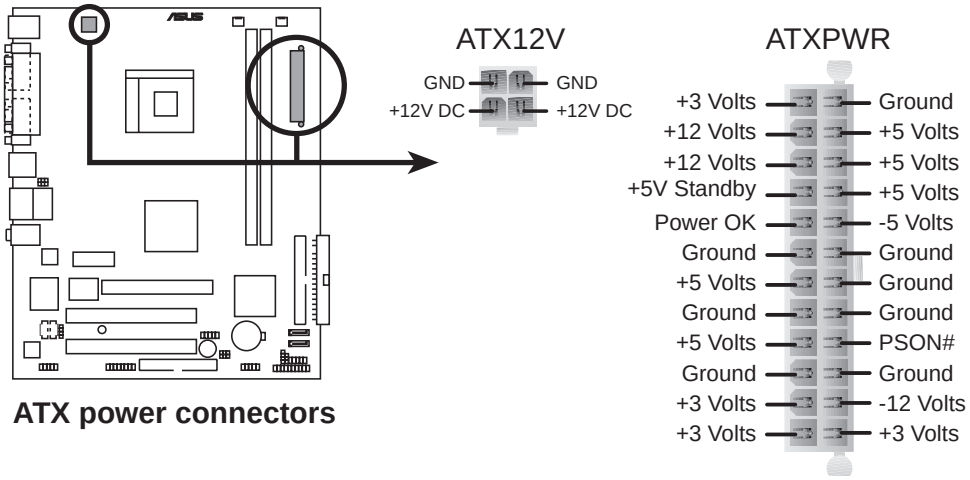
These connectors allow you to receive stereo audio input from audio sources such as an optical drive, TV tuner, or MPEG card.



Internal audio connectors

6. ATX power connectors (24-pin ATXPWR, 4-pin ATX12V)

These connectors are for ATX power supply plugs. The plugs from the power supply are pre-connected to these connectors. If you have disconnected them during installation, find the proper orientation and push down the plugs firmly to the connectors until they fit.



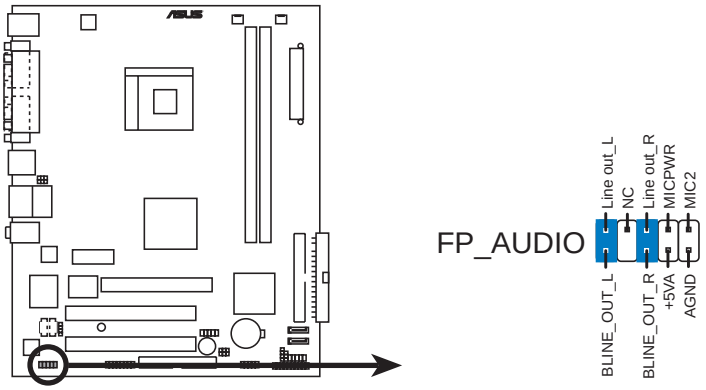
ATX power connectors

Important notes on the motherboard power requirements

- Do not forget to connect the 4-pin ATX +12 V power plug; otherwise, the system will not boot up.
- The system comes with a proprietary ATX 12 V Specification 2.0 power supply unit (PSU) with a minimum 275 W power rating.

7. Front panel audio connector (10-1 pin FP_AUDIO)

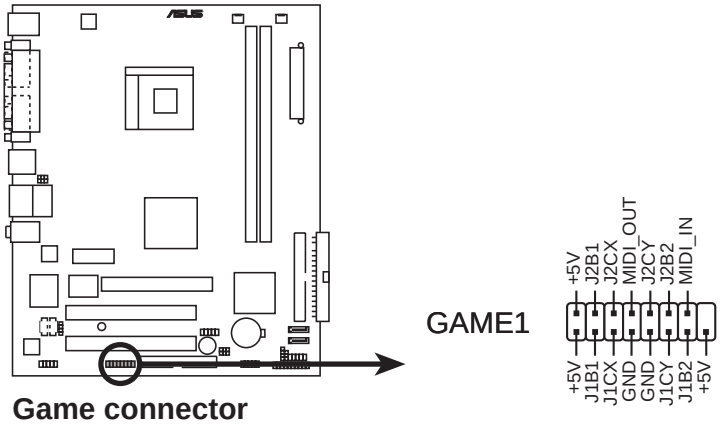
This connector supports the front panel audio I/O ports with the legacy AC'97 audio standard.



Front panel audio connector

8. GAME/MIDI port connector (16-1 pin GAME)

This connector is for a GAME/MIDI port. Connect the USB/GAME module cable to this connector, then install the module to a slot opening at the back of the system chassis. The GAME/MIDI port connects a joystick or game pad for playing games, and MIDI devices for playing or editing audio files.



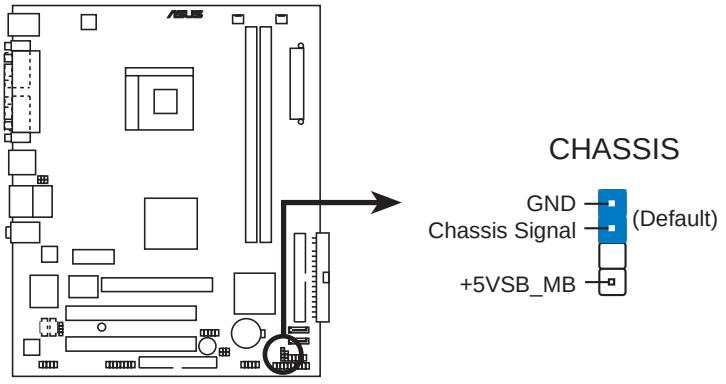
Game connector

The GAME/MIDI module is purchased separately.

9. Chassis intrusion connector (4-1 pin CHASSIS)

This connector is for a chassis-mounted intrusion detection sensor or switch. Connect one end of the chassis intrusion sensor or switch cable to this connector. The chassis intrusion sensor or switch sends a high-level signal to this connector when a chassis component is removed or replaced. The signal is then generated as a chassis intrusion event.

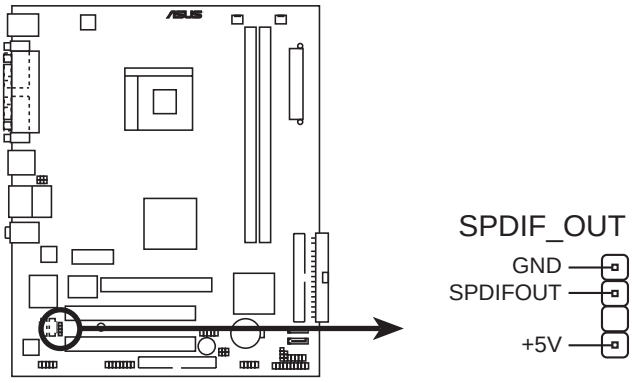
By default, the pins labeled “Chassis Signal” and “Ground” are shorted with a jumper cap. Remove the jumper caps only when you intend to use the chassis intrusion detection feature.



Chassis intrusion connector

10. Digital audio connector (4-1 pin SPDIF_OUT)

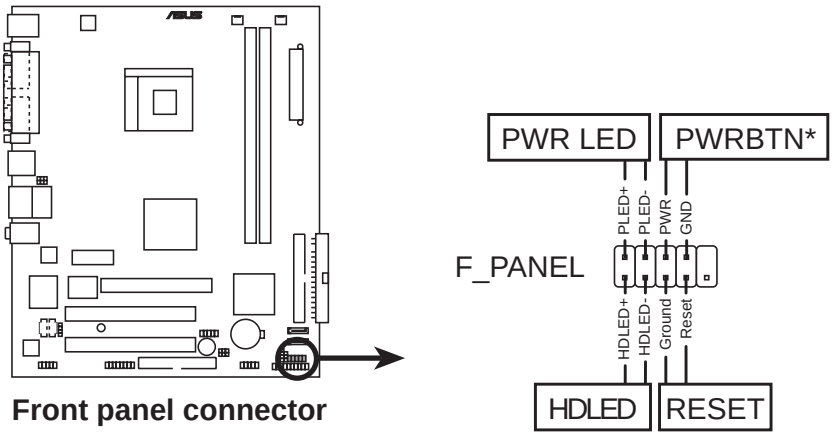
This connector supports the front panel combined Line Out and S/PDIF Out port.



Digital audio connector

11. System panel connector (10-1 pin F_PANEL)

This connector supports several chassis-mounted functions.



Front panel connector

- **System power LED (2-pin PWR_LED)**
  This 3-pin connector is for the system power LED. Connect the chassis power LED cable to this connector. The system power LED lights up when you turn on the system power, and blinks when the system is in sleep mode.
- **Hard disk drive activity LED (2-pin HD_LED)**
  This 2-pin connector is for the HDD Activity LED. Connect the HDD Activity LED cable to this connector. The IDE LED lights up or flashes when data is read from or written to the HDD.

- **ATX power button/soft-off button (2-pin PWRBTN)**
  This connector is for the system power button. Pressing the power button turns the system on or puts the system in sleep or soft-off mode depending on the BIOS settings. Pressing the power switch for more than four seconds while the system is ON turns the system OFF.
- **Reset button (2-pin RESET)**
  This 2-pin connector is for the chassis-mounted reset button for system reboot without turning off the system power.

Chapter 5

This chapter tells how to change system settings through the BIOS Setup menus and describes the BIOS parameters.

ASUS Pundit-AE3

BIOS setup

5.1 Managing and updating your BIOS

The following utilities allow you to manage and update the motherboard Basic Input/Output System (BIOS) setup.

1. **ASUS EZFlash** (Updates the BIOS in DOS mode using the motherboard support CD.)
2. **ASUS CrashFree BIOS 2** (Updates the BIOS using the motherboard support CD when the BIOS file fails or gets corrupted.)
3. **ASUS Update** (Updates the BIOS in Windows® environment.)

Refer to the corresponding sections for details on these utilities.

5.1.1 ASUS EZ Flash utility

The ASUS EZ Flash feature allows you to update the BIOS without having to go through the long process of booting from a floppy disk and using a DOS-based utility. The EZ Flash utility is built-in the BIOS chip so it is accessible by pressing <Alt> + <F2> during the Power-On Self Tests (POST).

You can use the motherboard support CD to recover the original BIOS file.

To update the BIOS using EZ Flash:

1. Visit the ASUS website (www.asus.com) to download the latest BIOS file for the motherboard and rename the same to **K8S-MV-P.ROM**.
2. Save the BIOS file to a CD, then restart the system.
3. Press <Alt> + <F2> during POST to display the following.

```
EZFlash starting BIOS update
Checking for floppy...
Floppy not found!
Checking for CD-ROM...
```

4. Insert the CD that contains the BIOS file to the optical drive. When the correct BIOS file is found, EZ Flash performs the BIOS update process and automatically reboots the system when done.

```
EZFlash starting BIOS update
Checking for floppy...
Floppy not found!
Checking for CD-ROM...
CD-ROM found!
Reading file "K8S-MV-P.rom". Completed.
Start erasing.......|
Start programming...|
Flashed successfully. Rebooting.
```

- Do not shut down or reset the system while updating the BIOS to prevent system boot failure!
- A “CD-ROM not found!” error message appears if there is no CD in the optical drive. A “K8S-MV-P.ROM not found!” error message appears if the correct BIOS file is not found in the CD. Make sure that you rename the BIOS file to K8S-MV-P.ROM.

5.1.2 ASUS CrashFree BIOS 2 utility

The ASUS CrashFree BIOS 2 is an auto recovery tool that allows you to restore the BIOS file when it fails or gets corrupted during the updating process. You can update a corrupted BIOS file using the motherboard support CD that contains the original or updated BIOS file.

Prepare the motherboard support CD containing the original or updated motherboard BIOS before using this utility.

Recovering the BIOS

To recover the BIOS:

1. Remove any floppy disk from the floppy disk drive, then turn on the system.
2. Insert the support CD to the optical drive.
3. The utility displays the following message and automatically checks the floppy disk for the original or updated BIOS file.

```
Bad BIOS checksum. Starting BIOS recovery...
Checking for floppy...
```

When no floppy disk is found, the utility automatically checks the optical drive for the original or updated BIOS file. The utility then updates the corrupted BIOS file.

```
Bad BIOS checksum. Starting BIOS recovery...
Checking for floppy...
Floppy not found!
Checking for CD-ROM...
CD-ROM found!
Reading file "K8S-MV-P.ROM". Completed.
```

DO NOT shut down or reset the system while updating the BIOS! Doing so can cause system boot failure!

4. Restart the system after the utility recovers or updates the BIOS file.

The recovered BIOS may not be the latest BIOS version for this motherboard. Visit the ASUS website (www.asus.com) to download the latest BIOS file.

5.1.3 ASUS Update utility

The ASUS Update is a utility that allows you to manage, save, and update the motherboard BIOS in Windows® environment. The ASUS Update utility allows you to:

- Save the current BIOS file
- Download the latest BIOS file from the Internet
- Update the BIOS from an updated BIOS file
- Update the BIOS directly from the Internet, and
- View the BIOS version information.

This utility is available in the support CD that came with the system package.

ASUS Update requires an Internet connection either through a network or an Internet Service Provider (ISP).

Installing ASUS Update

To install ASUS Update:

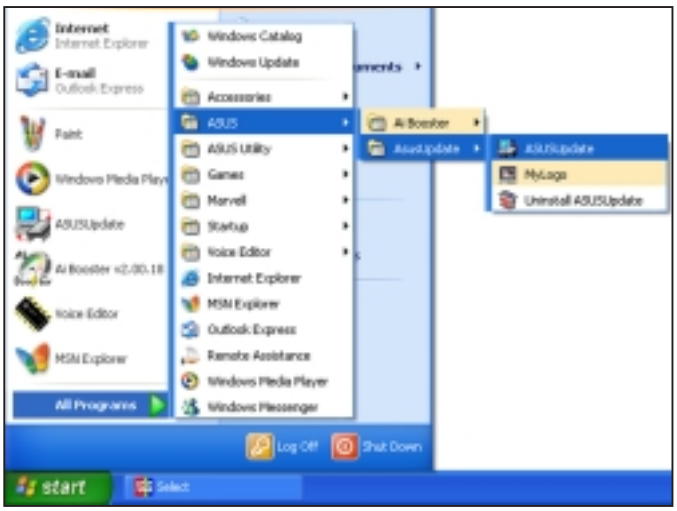
1. Place the support CD in the optical drive. The **Drivers** menu appears.
2. Click the **Utilities** tab, then click **ASUS Update**. See page 3-4 for the **Utilities** screen menu.
3. The ASUS Update utility is copied to your system.

Quit all Windows® applications before you update the BIOS using this utility.

Updating the BIOS through the Internet

To update the BIOS through the Internet:

1. Launch the ASUS Update utility from the Windows® desktop by clicking **Start** > **Programs** > **ASUS** > **ASUSUpdate** > **ASUSUpdate**. The ASUS Update main window appears.



2. Select **Update BIOS from the Internet** option from the drop-down menu, then click **Next**.

3. Select the ASUS FTP site nearest you to avoid network traffic, or click **Auto Select**. Click **Next**.

4. From the FTP site, select the BIOS version that you wish to download. Click **Next**.
5. Follow the screen instructions to complete the update process.

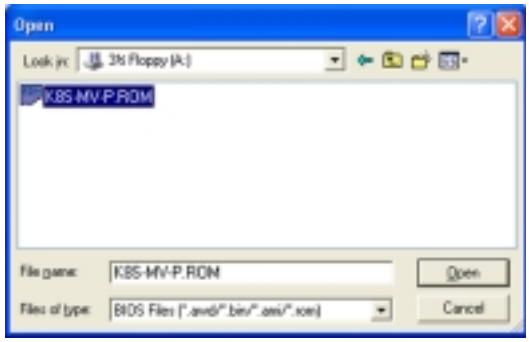
The ASUS Update utility is capable of updating itself through the Internet. Always update the utility to avail all its features.

Updating the BIOS through a BIOS file

To update the BIOS through a BIOS file:

1. Launch the ASUS Update utility from the Windows® desktop by clicking **Start** > **Programs** > **ASUS** > **ASUSUpdate** > **ASUSUpdate**. The ASUS Update main window appears.
2. Select **Update BIOS from a file** option from the drop-down menu, then click **Next**.

3. Locate the BIOS file from the **Open** window, then click **Save**.
4. Follow the screen instructions to complete the update process.



5.2 BIOS setup program

This motherboard supports a programmable firmware chip that you can update using the provided utility described in section "5.1 Managing and updating your BIOS."

Use the BIOS Setup program when you are installing a motherboard, reconfiguring your system, or prompted to "Run Setup." This section explains how to configure your system using this utility.

Even if you are not prompted to use the Setup program, you can change the configuration of your computer in the future. For example, you can enable the security password feature or change the power management settings. This requires you to reconfigure your system using the BIOS Setup program so that the computer can recognize these changes and record them in the CMOS RAM of the firmware hub.

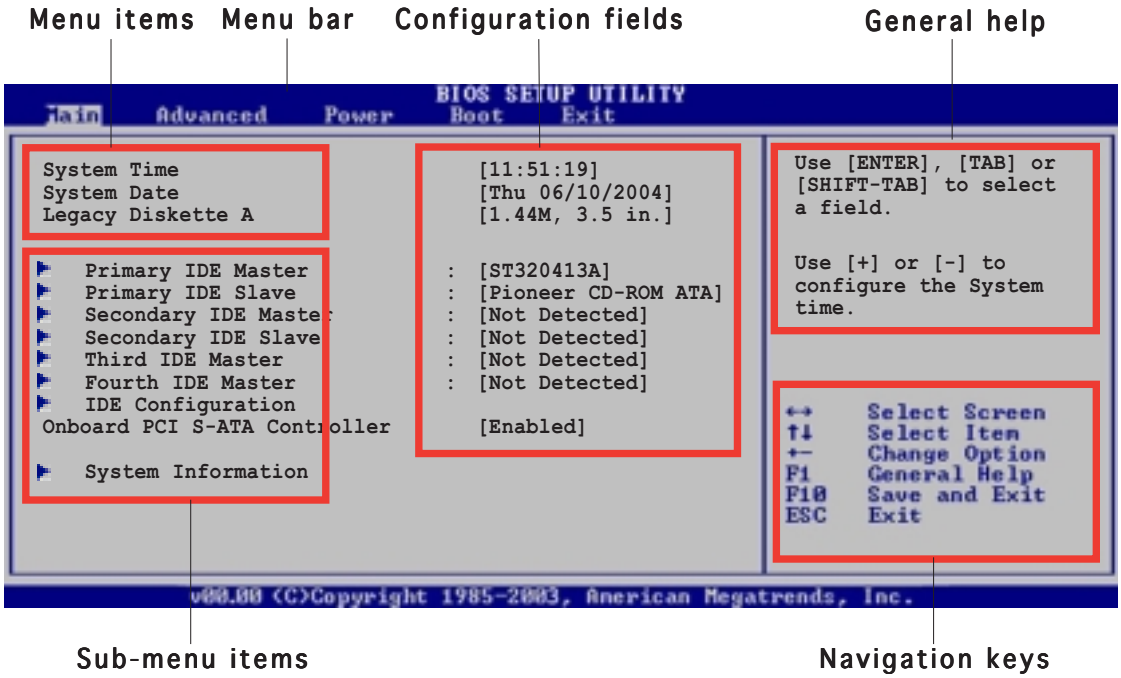
The firmware hub on the motherboard stores the Setup utility. When you start up the computer, the system provides you with the opportunity to run this program. Press <Del> during the Power-On-Self-Test (POST) to enter the Setup utility; otherwise, POST continues with its test routines.

If you wish to enter Setup after POST, restart the system by pressing <Ctrl+Alt+Delete>, or by pressing the reset button on the system chassis. You can also restart by turning the system off and then back on. Do this last option only if the first two failed.

The Setup program is designed to make it as easy to use as possible. Being a menu-driven program, it lets you scroll through the various sub-menus and make your selections from the available options using the navigation keys.

- The default BIOS settings for this motherboard apply for most conditions to ensure optimum performance. If the system becomes unstable after changing any BIOS settings, load the default settings to ensure system compatibility and stability. Select the **Load Default Settings** item under the Exit Menu. See section "5.7 Exit Menu."
- The BIOS setup screens shown in this section are for reference purposes only, and may not exactly match what you see on your screen.
- Visit the ASUS website (www.asus.com) to download the latest BIOS file for this motherboard.

5.2.1 BIOS menu screen



5.2.2 Menu bar

The menu bar on top of the screen has the following main items:

Main	For changing the basic system configuration
Advanced	For changing the advanced system settings
Power	For changing the advanced power management (APM) configuration
Boot	For changing the system boot configuration
Exit	For selecting the exit options and loading default settings

To select an item on the menu bar, press the right or left arrow key on the keyboard until the desired item is highlighted.

5.2.3 Navigation keys

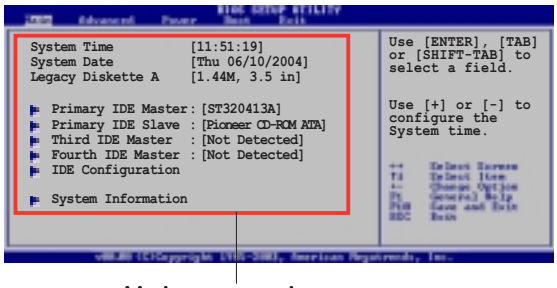
At the bottom right corner of a menu screen are the navigation keys for that particular menu. Use the navigation keys to select items in the menu and change the settings.

Some of the navigation keys differ from one screen to another.

5.2.4 Menu items

The highlighted item on the menu bar displays the specific items for that menu. For example, selecting **Main** shows the Main menu items.

The other items (Advanced, Power, Boot, and Exit) on the menu bar have their respective menu items.



Main menu items

5.2.5 Sub-menu items

A solid triangle before each item on any menu screen means that the iteam has a sub-menu. To display the sub-menu, select the item and press <Enter>.

5.2.6 Configuration fields

These fields show the values for the menu items. If an item is user-configurable, you can change the value of the field opposite the item. You cannot select an item that is not user-configurable.

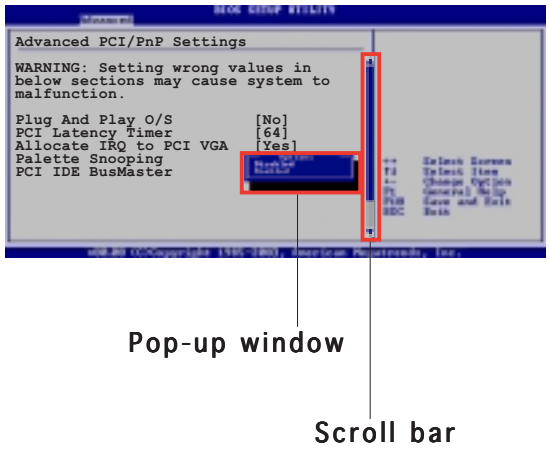
A configurable field is enclosed in brackets, and is highlighted when selected. To change the value of a field, select it then press <Enter> to display a list of options. Refer to "5.2.7 Pop-up window."

5.2.7 Pop-up window

Select a menu item then press <Enter> to display a pop-up window with the configuration options for that item.

5.2.8 Scroll bar

A scroll bar appears on the right side of a menu screen when there are items that do not fit on the screen. Press the Up/Down arrow keys or <Page Up> / <Page Down> keys to display the other items on the screen.



Pop-up window

Scroll bar

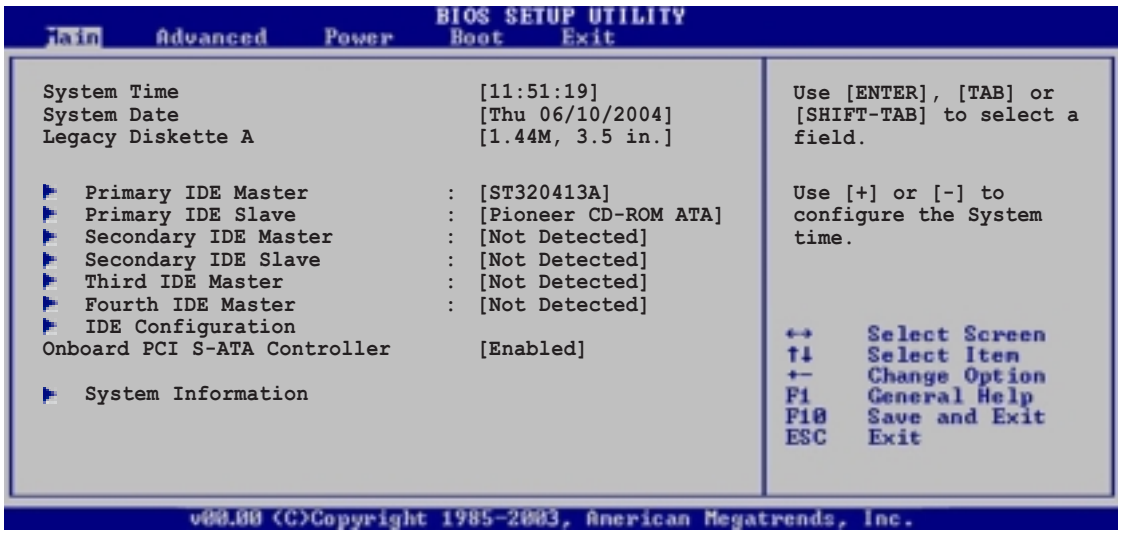
5.2.9 General help

At the top right corner of the menu screen is a brief description of the selected item.

5.3 Main menu

When you enter the BIOS Setup program, the Main menu screen appears, giving you an overview of the basic system information.

Refer to section "5.2.1 BIOS menu screen" for information on the menu screen items and how to navigate through them.



5.3.1 System Time [xx:xx:xx]

Allows you to set the system time.

5.3.2 System Date [Day xx/xx/xxxx]

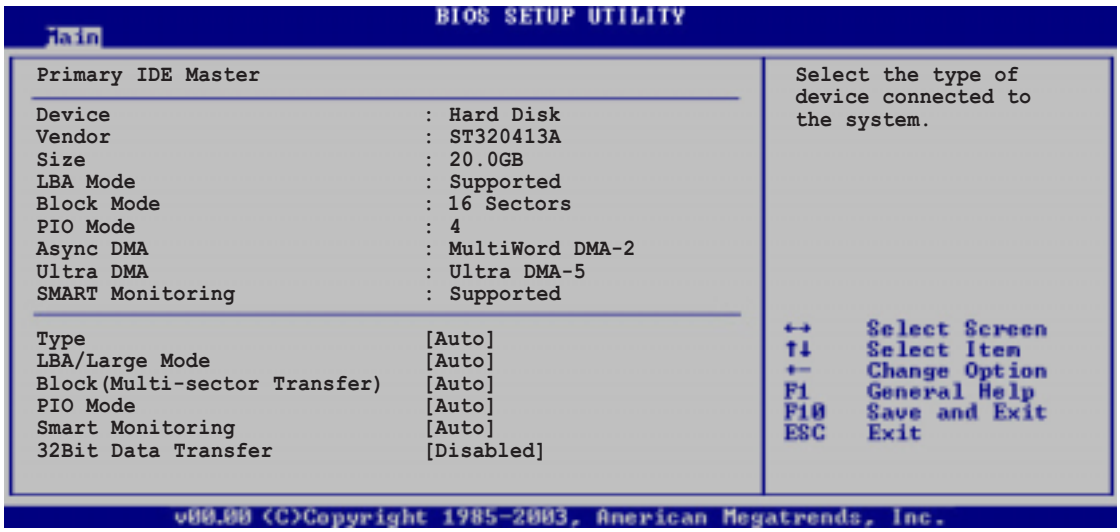
Allows you to set the system date.

5.3.3 Legacy Diskette A [1.44M, 3.5 in.]

Sets the type of floppy drive installed. Configuration options: [Disabled] [360K, 5.25 in.] [1.2M , 5.25 in.] [720K , 3.5 in.] [1.44M, 3.5 in.] [2.88M, 3.5 in.]

5.3.4 Primary, Secondary Third, and Fourth IDE Master/Slave

While entering Setup, the BIOS automatically detects the presence of IDE devices. There is a separate sub-menu for each IDE device. Select a device item, then press <Enter> to display the IDE device information.



The BIOS automatically detects the values opposite the dimmed items (Device, Vendor, Size, LBA Mode, Block Mode, PIO Mode, Async DMA, Ultra DMA, and SMART monitoring). These values are not user-configurable. These items show N/A if no IDE device is installed in the system.

Type [Auto]

Selects the type of IDE drive. Setting to Auto allows automatic selection of the appropriate IDE device type. Select CDROM if you are specifically configuring a CD-ROM drive. Select ARMD (ATAPI Removable Media Device) if your device is either a ZIP, LS-120, or MO drive.
Configuration options: [Not Installed] [Auto] [CDROM] [ARMD]

LBA/Large Mode [Auto]

Enables or disables the LBA mode. Setting to Auto enables the LBA mode if the device supports this mode, and if the device was not previously formatted with LBA mode disabled. Configuration options: [Disabled] [Auto]

Block (Multi-sector Transfer) [Auto]

Enables or disables data multi-sectors transfers. When set to Auto, the data transfer from and to the device occurs multiple sectors at a time if the device supports multi-sector transfer feature. When set to [Disabled], the data transfer from and to the device occurs one sector at a time.
Configuration options: [Disabled] [Auto]

PIO Mode [4]

Selects the PIO mode.
Configuration options: [Auto] [0] [1] [2] [3] [4]

DMA Mode [Auto]

Selects the DMA mode. Configuration options: [Auto] [SWDMA0] [SWDMA1] [SWDMA2] [MWDMA0] [MWDMA1] [MWDMA2] [UDMA0] [UDMA1] [UDMA2] [UDMA3] [UDMA4] [UDMA5]

SMART Monitoring [Auto]

Sets the Smart Monitoring, Analysis, and Reporting Technology.
Configuration options: [Auto] [Disabled] [Enabled]

32Bit Data Transfer [Disabled]

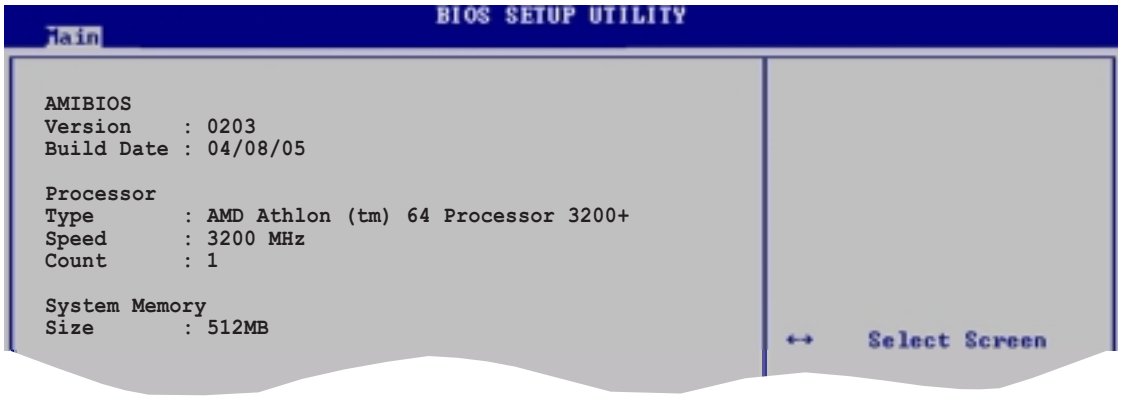
Enables or disables 32-bit data transfer.
Configuration options: [Disabled] [Enabled]

5.3.5 OnBoard PCI SATA Controller [Native]

Disables or set the onboard PCI Serial ATA controller.
Configuration options: [Disabled] [Native] [RAID]

5.3.6 System Information

This menu gives you an overview of the general system specifications. The BIOS automatically detects the items in this menu.



AMI BIOS

Displays the auto-detected BIOS information.

Processor

Displays the auto-detected CPU specification.

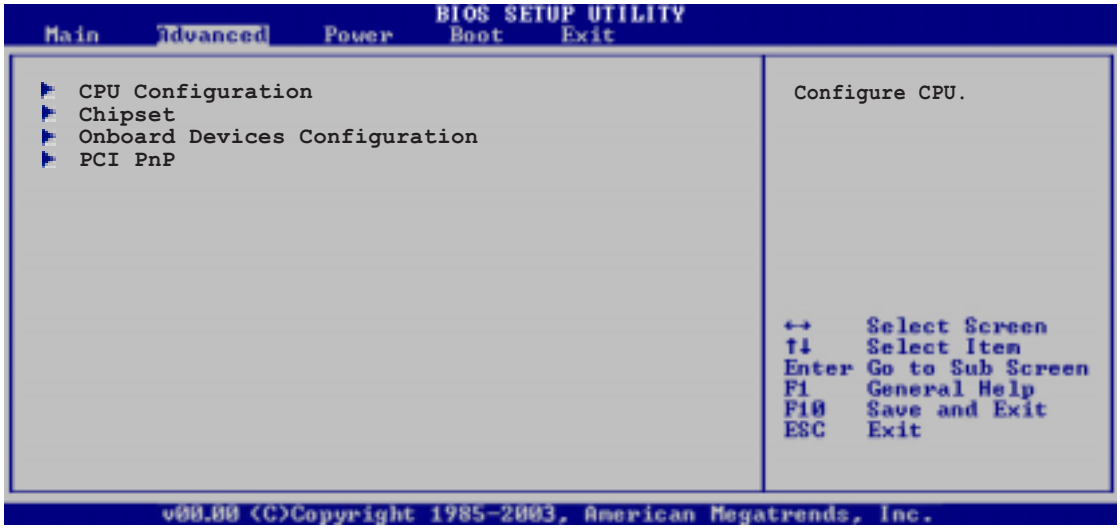
System Memory

Displays the auto-detected system memory.

5.4 Advanced menu

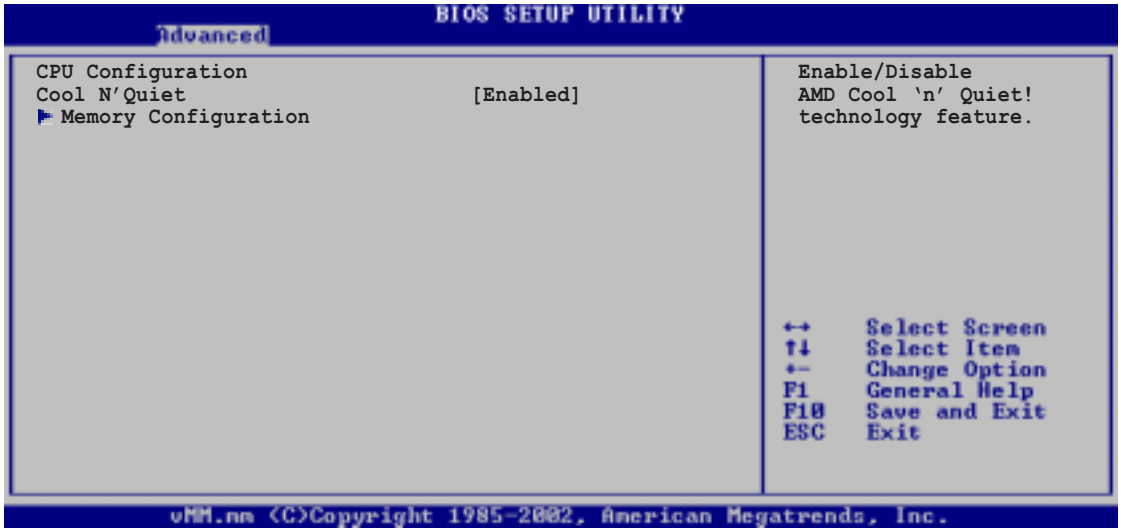
The Advanced menu items allow you to change the settings for the CPU and other system devices.

Take caution when changing the settings of the Advanced menu items. Incorrect field values can cause the system to malfunction.



5.4.1 CPU Configuration

The items in this menu show the CPU-related information auto-detected by BIOS.

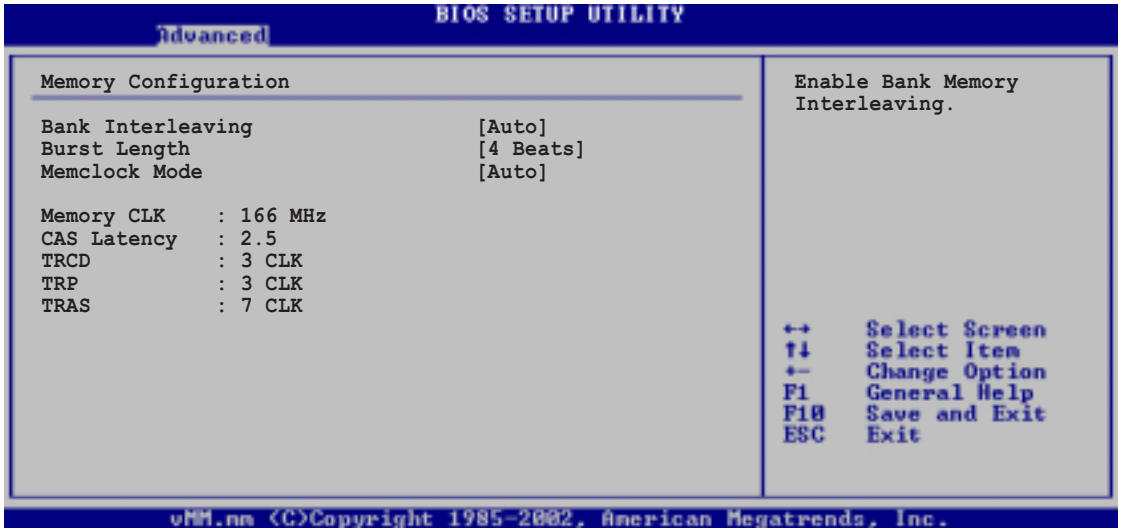


Cool N'Quiet [Enabled]

Enables or disables the AMD Cool 'n' Quiet! technology.
Configuration options: [Disabled] [Enabled]

Memory Configuration

Allows you to set memory parameters to enhance system performance.



Bank Interleaving [Auto]
Allows you to enable or disabled memory bank interleaving.
Configuration options: [Auto] [Disabled]

Burst Length [4 Beats]
Sets the operating burst length.
Configuration options: [8 Beats] [4 Beats] [2 Beats]

Memclock Mode [Auto]
Sets the memory clock mode. Configuration options: [Auto] [Limit]

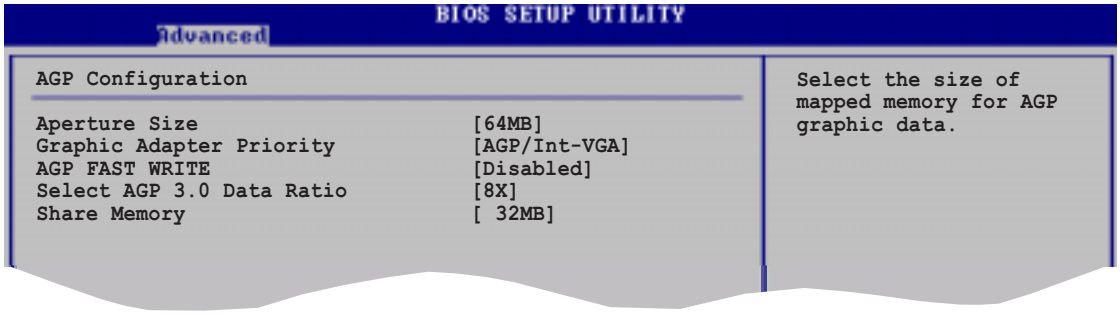
Memclock Value [100MHz]
Sets the memory clock value. This item appears only when the Memclock Mode item is set to [Limit].
Configuration options: [100MHz] [133MHz] [166MHz] [200 MHz]

5.4.2 Chipset

The Chipset menu items allow you to change the advanced chipset settings. Select an item then press <Enter> to display the sub-menu.

AGP Configuration

Allows you to set the AGP parameters.



Aperture Size [64MB]

Allows you to set the size of mapped memory for AGP graphic data.
Configuration options: [32MB] [64MB] [128MB]

Graphic Adapter Priority [AGP/Int-VGA]

Allows you to select the primary graphics boot device.
Configuration options: [Internal VGA] [AGP/Int-VGA] [AGP/PCI] [PCI/AGP] [PCI/Int-VGA]

AGP FAST WRITE [Disabled]

Enables or disables the AGP Fast Write feature.
Configuration options: [Disabled] [Enabled]

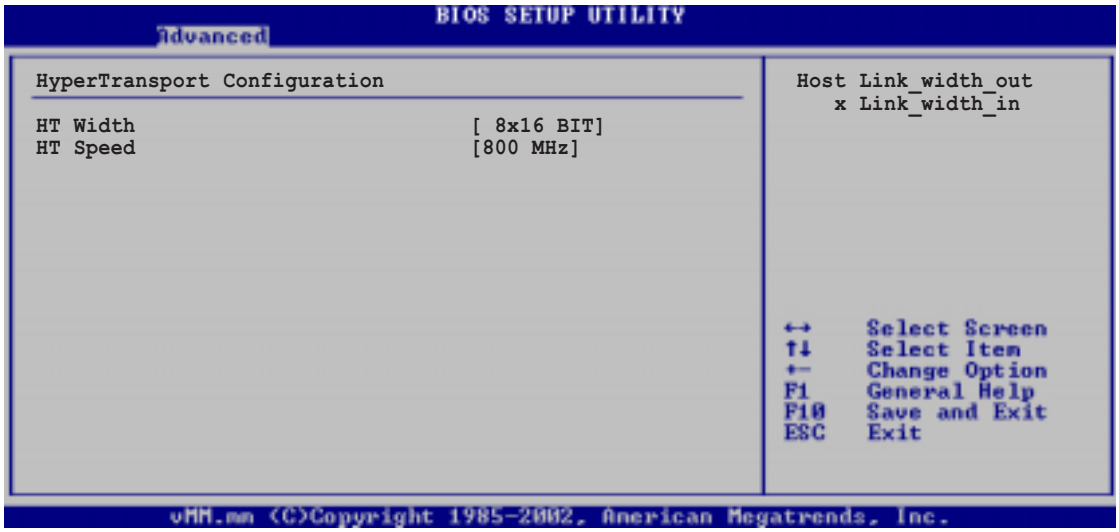
Select AGP 3.0 Data Ratio [8X]

Allows you to select the AGP 3.0 data ratio.
Configuration options: [8X] [4X]

Shared Memory [32MB]

Allows you to set the shared memory size for the video RAM.
Configuration options: [32MB] [64MB] [128MB]

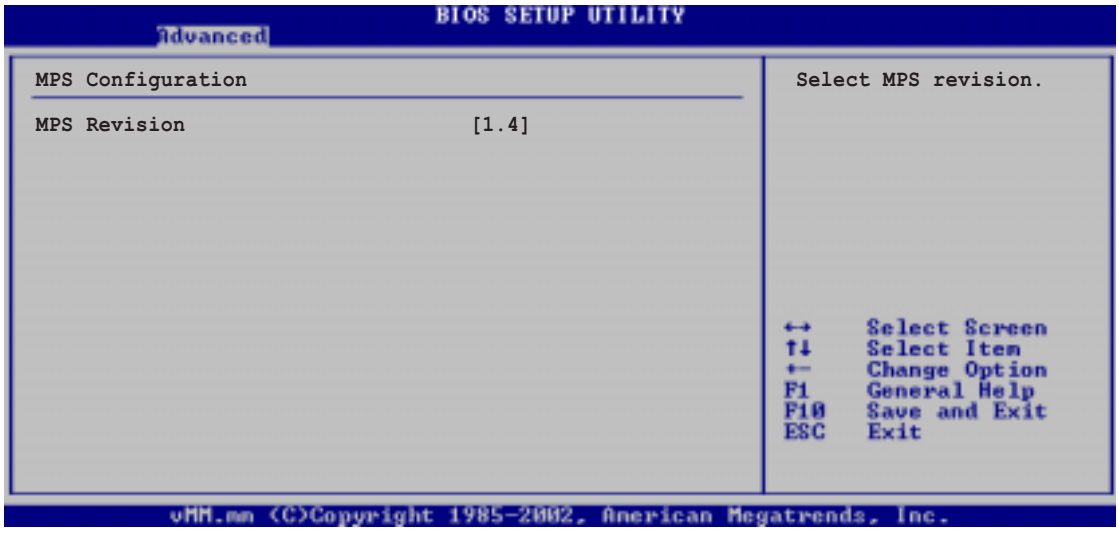
HyperTransport Configuration



HT Width [8x16 BIT]
Sets the HyperTransport data width.
Configuration options: [8x8 BIT] [16x16 BIT] [16x8 BIT] [8x16 BIT]

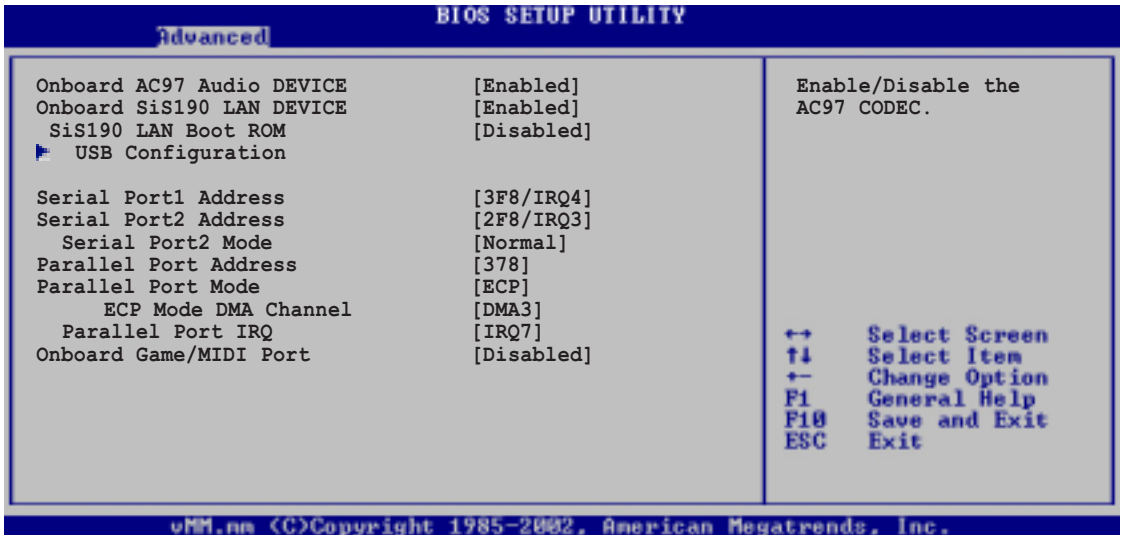
HT Speed [800 MHz]
Sets the HyperTransport data speed.
Configuration options: [200s MHz] [400 MHz] [600 MHz] [800 MHz]

MPS Configuration



MPS Revision [1.4]
Sets the MPS revision value.
Configuration options: [1.1] [1.4]

5.4.3 Onboard Devices Configuration



Onboard AC97 Audio DEVICE [Enabled]

This item enables or disables the onboard AC'97 audio CODEC device.
Configuration options: [Disabled] [Enabled]

Onboard SiS190 LAN DEVICE [Enabled]

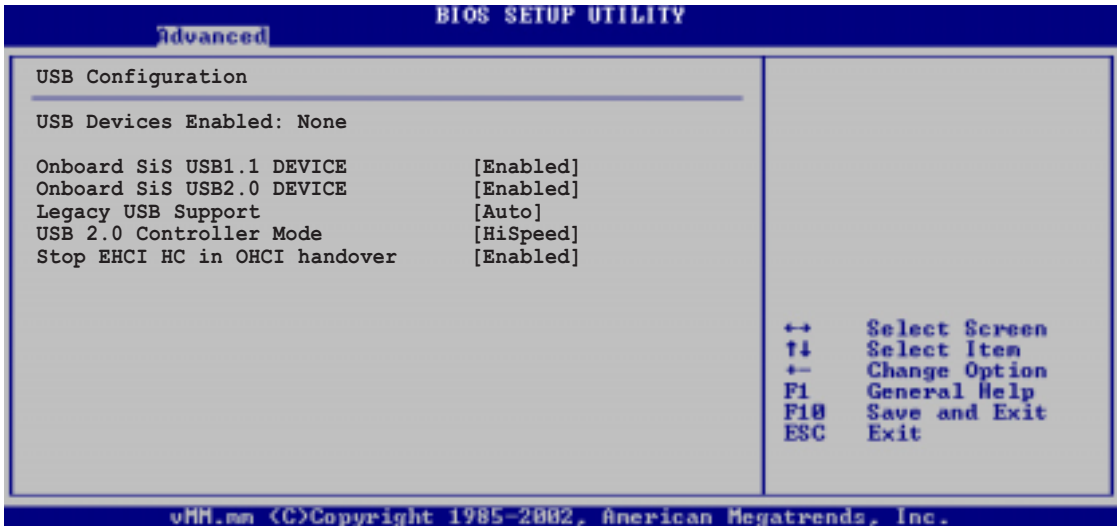
This item enables or disables the onboard SIS LAN device.
Configuration options: [Disabled] [Enabled]

SIS190 LAN Boot ROM [Disabled]

Allows you to enable or disable the onboard LAN Boot ROM.
Configuration options: [Disabled] [Enabled]

USB Configuration

The items in this menu allows you to change the USB-related features.
Select an item then press <Enter> to display the configuration options.



The USB Devices Enabled items show the auto-detected values. If no USB device is detected, the item shows **None**.

OnBoard SiS USB 1.1 Device [Enabled]
Allows you to enable or disable the onboard SiS USB 1.1 device. Configuration options: [Disabled] [Enabled]

OnBoard SiS USB 2.0 Device [Enabled]
Allows you to enable or disable the onboard SiS USB 2.0 device. Configuration options: [Disabled] [Enabled]

Legacy USB Support [Auto]
Allows you to enable or disable support for legacy USB devices. Setting to Auto allows the system to detect the presence of USB devices at startup. If detected, the USB controller legacy mode is enabled. If no USB device is detected, the legacy USB support is disabled. Configuration options: [Disabled] [Enabled] [Auto]

USB 2.0 Controller Mode [HiSpeed]
Allows you to configure the USB 2.0 controller in HiSpeed (480 Mbps) or Full Speed (12 Mbps). Configuration options: [HiSpeed] [Full Speed]

Stop EHCI HC in OHCI handover [Enabled]
Allows you to enable or disable the feature to stop the EHCI host controller during the OHCI OS handover call. This is needed when installing operating systems that do not support EHCI host controllers. Configuration options: [Disabled] [Enabled]

Serial Port1 Address [3F8/IRQ4]

Allows you to select the Serial Port1 base address.
Configuration options: [Disabled] [3F8/IRQ4] [3E8/IRQ4] [2E8/IRQ3]

Serial Port2 Address [2F8/IRQ3]

Allows you to select the Serial Port2 base address.
Configuration options: [Disabled] [2F8/IRQ3] [3E8/IRQ4] [2E8/IRQ3]

Serial Port2 Mode [Normal]

Sets the Serial Port 2 mode.
Configuration options: [Normal] [IrDA] [Ask IR]

Parallel Port Address [378]

Allows you to select the Parallel Port base address.
Configuration options: [Disabled] [378] [278] [3BC]

Parallel Port Mode [ECP]

Allows you to select the Parallel Port mode. When the item **Parallel Port Address** is set to **3BC**, the Parallel Port Mode options are only Normal, Bi-directional, and ECP. Configuration options: [Normal] [Bi-directional] [EPP] [ECP]

ECP Mode DMA Channel [DMA3]
Allows selection of the Parallel Port ECP DMA channel. This item appears only when the **Parallel Port Mode** is set to **ECP**. Configuration options: [DMA0] [DMA1] [DMA3]

Parallel Port IRQ [IRQ7]
Allows you to select the Parallel Port IRQ.
Configuration options: [IRQ5] [IRQ7]

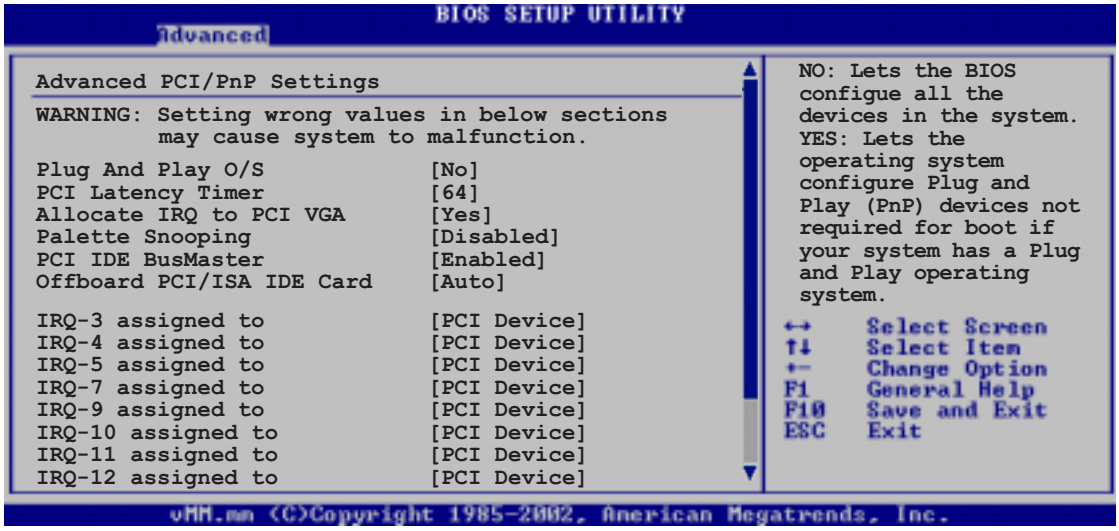
Onboard Game/MIDI Port [Disabled]

Allows you to set the onboard Game/MIDI port address or disable the port. Configuration options: [Disabled] [200/300] [200/300] [208/300] [208/300]

5.4.4 PCI PnP

The PCI PnP menu items allow you to change the advanced settings for PCI/PnP devices. The menu includes setting IRQ and DMA channel resources for either PCI/PnP or legacy ISA devices, and setting the memory size block for legacy ISA devices.

Take caution when changing the settings of the PCI PnP menu items. Incorrect field values can cause the system to malfunction.



Plug And Play O/S [No]

When set to [No], BIOS configures all the devices in the system. When set to [Yes] and if you install a Plug and Play operating system, the operating system configures the Plug and Play devices not required for boot. Configuration options: [No] [Yes]

PCI Latency Timer [64]

Allows you to select the value in units of PCI clocks for the PCI device latency timer register. Configuration options: [32] [64] [96] [128] [160] [192] [224] [248]

Allocate IRQ to PCI VGA [Yes]

When set to [Yes], BIOS assigns an IRQ to PCI VGA card if the card requests for an IRQ. When set to [No], BIOS does not assign an IRQ to the PCI VGA card even if requested. Configuration options: [No] [Yes]

Palette Snooping [Disabled]

When set to [Enabled], the pallete snooping feature informs the PCI devices that an ISA graphics device is installed in the system so that the latter can function correctly. Configuration options: [Disabled] [Enabled]

PCI IDE BusMaster [Enabled]

Allows BIOS to use PCI bus mastering when reading/writing to IDE devices.
Configuration options: [Disabled] [Enabled]

OffBoard PCI/ISA IDE Card [Auto]

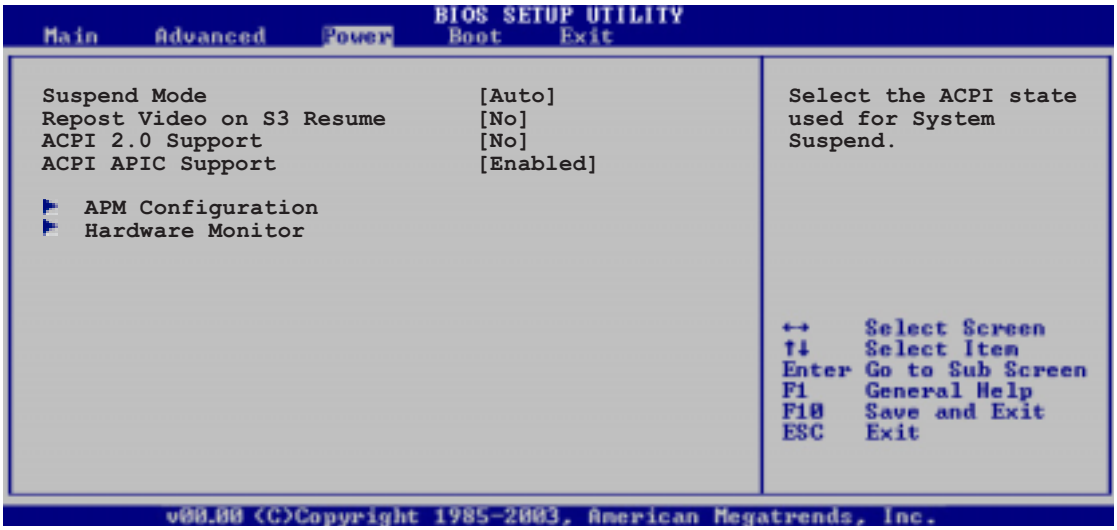
Allows BIOS to use PCI bus mastering when reading/writing to IDE devices.
Configuration options: [Auto] [PCI Slot]

IRQ xx assigned to [PCI Device]

When set to [Available], the specific IRQ is free for use of PCI/PnP devices.
When set to [Reserved], the IRQ is reserved for legacy ISA devices.
Configuration options: [PCI Device] [Reserved]

5.5 Power menu

The Power menu items allow you to change the settings for the Advanced Power Management (APM) and Advanced Configuration and Power Interface (ACPI). Select an item then press <Enter> to display the configuration options.



5.5.1 Suspend Mode [S1 & S3 (STR)]

Allows you to select the Advanced Configuration and Power Interface (ACPI) state to be used for system suspend.
Configuration options: [S1 (POS) Only] [S1 & S3 (STR)] [S3 Only]

5.5.2 Repost Video on S3 Resume [No]

Determines whether to invoke VGA BIOS post on S3/STR resume.
Configuration options: [No] [Yes]

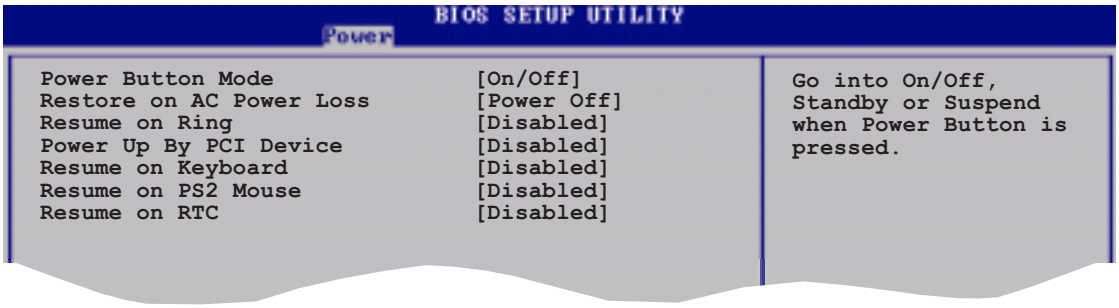
5.5.3 ACPI 2.0 Support [No]

Allows you to add more tables for Advanced Configuration and Power Interface (ACPI) 2.0 specifications. Configuration options: [No] [Yes]

5.5.4 ACPI APIC Support [Enabled]

Allows you to enable or disable the Advanced Programmable Interrupt Controller (APIC) mode under Advanced Configuration and Power Interface (ACPI). When set to Enabled, the ACPI APIC table pointer is included in the RSDT pointer list. Configuration options: [Disabled] [Enabled]

5.5.5 APM Configuration



Power Button Mode [On/Off]

Allows the system to go into On/Off mode or suspend mode when the power button is pressed. Configuration options: [On/Off] [Suspend]

Restore on AC Power Loss [Power Off]

When set to Power Off, the system goes into off state after an AC power loss. When set to Power On, the system goes on after an AC power loss. When set to Last State, the system goes into either off or on state, whatever the system state was before the AC power loss.
Configuration options: [Power Off] [Power On] [Last State]

Resume On Ring [Disabled]

Enables or disables the feature to power up the computer when the external modem receives a call while the computer is in Soft-off mode. Configuration options: [Disabled] [Enabled]

The computer cannot receive or transmit data until the computer and applications are fully running. Thus, connection cannot be made on the first try. Turning an external modem off and then back on while the computer is off causes an initialization string that turns the system power on.

Power Up By PCI Device [Disabled]

Enables or disables the feature to turn ON the system through a PCI LAN or modem card. This feature requires an ATX power supply that provides at least 1A on the +5VSB lead. Configuration options: [Disabled] [Enabled]

Resume On Keyboard [Disabled]

Allows you to disable or enable the PS/2 Power-On by keyboard feature. This feature requires an ATX power supply that provides at least 1A on the +5VSB lead. Configuration options: [Disabled] [Enabled]

Resume On PS2 Mouse [Disabled]

When set to [Enabled], this parameter allows you to use the PS/2 mouse to turn on the system. This feature requires an ATX power supply that provides at least 1A on the +5VSB lead.
Configuration options: [Disabled] [Enabled]

Resume On RTC [Disabled]

Allows you to enable or disable RTC to generate a wake event. When this item is set to Enabled, the items RTC Alarm Date, RTC Alarm Hour, RTC Alarm Minute, and RTC Alarm Second appear with set values.
Configuration options: [Disabled] [Enabled]

The succeeding items appear when the **Power On By RTC Alarm** item is set to Enabled.

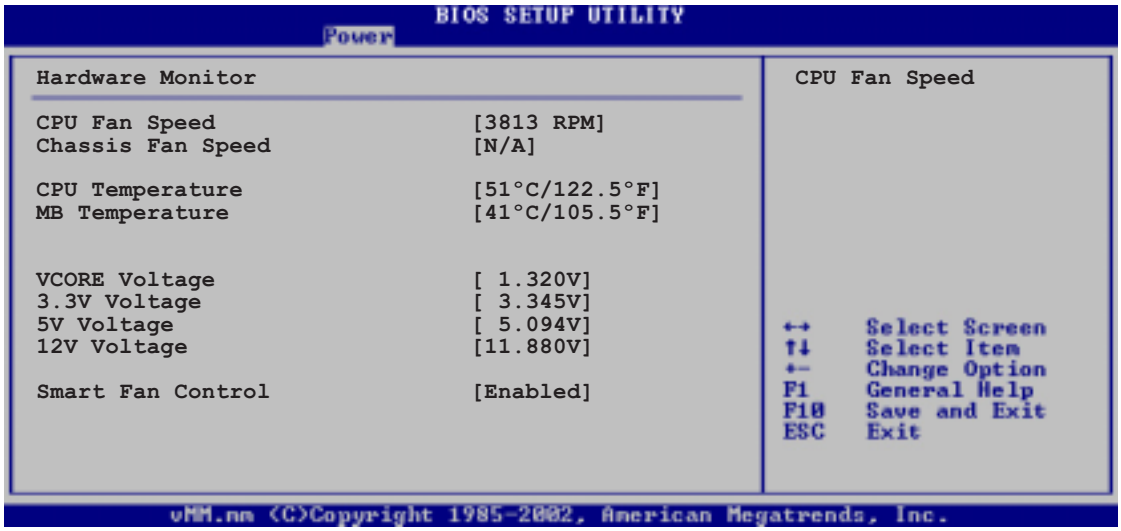
RTC Alarm Date
To set the alarm date, highlight this item and press the <+> or <-> key to make the selection. Configuration options: [Everyday] [1] [2] [3]... ~ [31]

RTC Alarm Hour
To set the alarm hour, highlight this item and press the <+> or <-> key to make the selection. Configuration options: [00] [1]... ~ [23]

RTC Alarm Minute
To set the alarm minute, highlight this item and press the <+> or <-> key to make the selection. Configuration options: [00] [1]... ~ [59]

RTC Alarm Second
To set the alarm second, highlight this item and press the <+> or <-> key to make the selection. Configuration options: [00] [1]... ~ [59]

5.5.6 Hardware Monitor



CPU Fan Speed [xxxxRPM] or [N/A]
Chassis Fan Speed [xxxxRPM] or [N/A]

The onboard hardware monitor automatically detects and displays the CPU and chassis fan speed in rotations per minute (RPM). If the fan is not connected to the motherboard, the field shows N/A.

CPU Temperature [xxx°C/xxx°F]
MB Temperature [xxx°C/xxx°F]

The onboard hardware monitor automatically detects and displays the motherboard and CPU temperatures. Select Disabled if you do not wish to display the detected temperatures.

VCORE Voltage, 3.3V Voltage, 5V Voltage, 12V Voltage

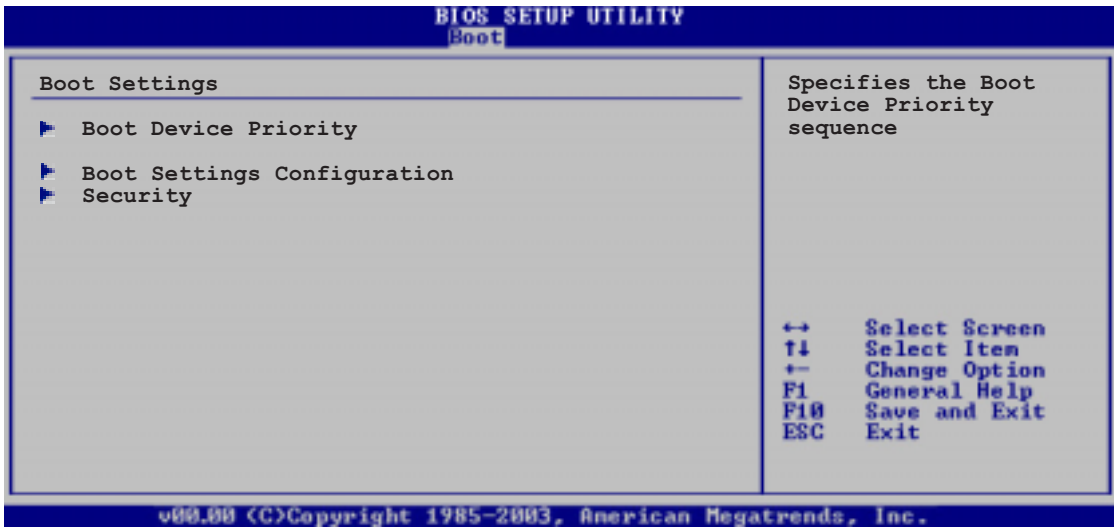
The onboard hardware monitor automatically detects the voltage output through the onboard voltage regulators.

Smart Fan Control [Enabled]

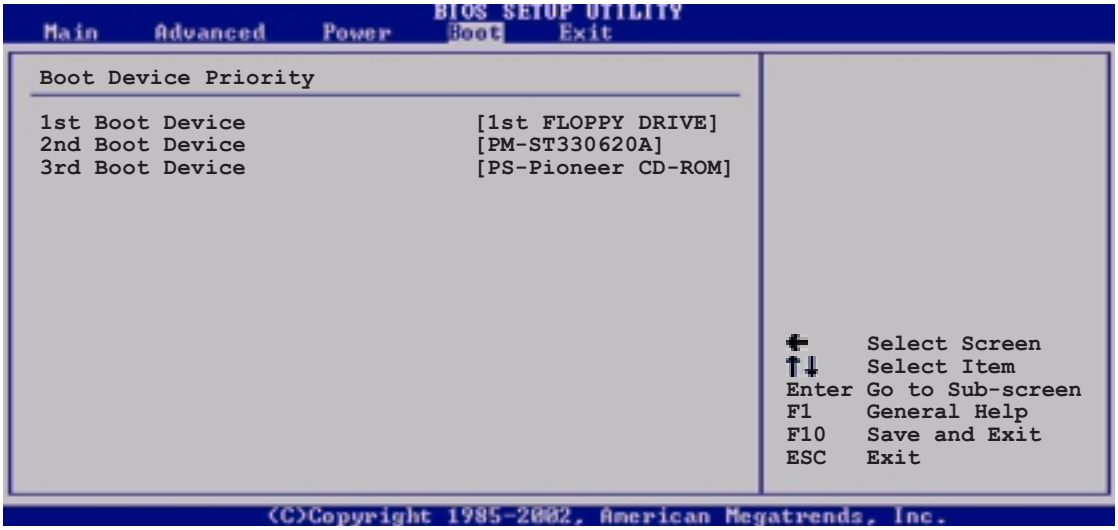
Allows you to enable or disable the ASUS Smart Fan feature that smartly adjusts the fan speeds for more efficient system operation. Configuration options: [Disabled] [Enabled]

5.6 Boot menu

The Boot menu items allow you to change the system boot options. Select an item then press <Enter> to display the sub-menu.



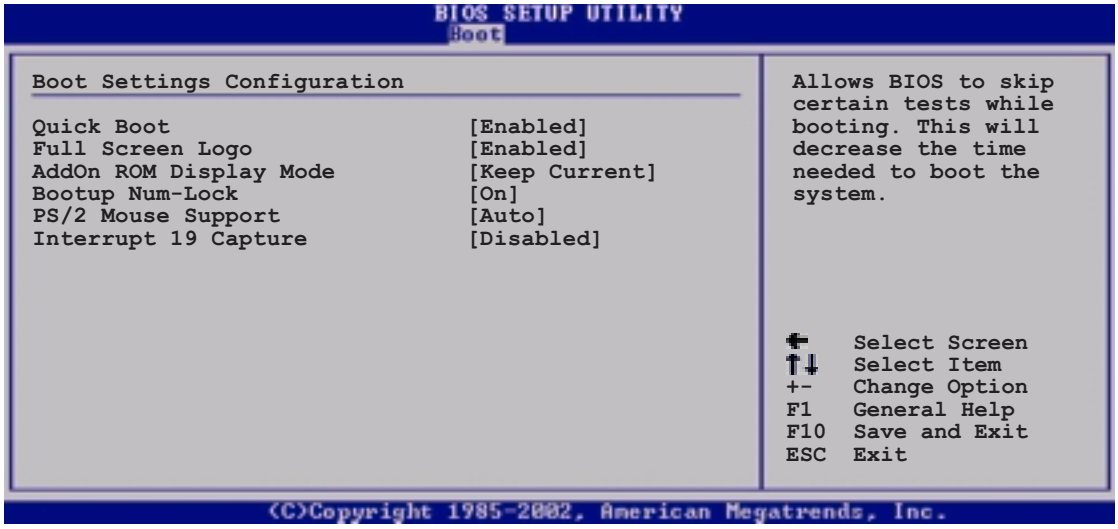
5.6.1 Boot Device Priority



1st ~ 3rd Boot Device [1st Floppy Drive]

These items specify the boot device priority sequence from the available devices. The number of device items that appears on the screen depends on the number of devices installed in the system.
Configuration options: [xxxxx Drive] [Disabled]

5.6.2 Boot Settings Configuration



Quick Boot [Enabled]

Enabling this item allows the BIOS to skip some power on self tests (POST) while booting to decrease the time needed to boot the system. When set to [Disabled], BIOS performs all the POST items.
Configuration options: [Disabled] [Enabled]

Full Screen Logo [Enabled]

This allows you to enable or disable the full screen logo display feature.
Configuration options: [Disabled] [Enabled]

Set this item to [Enabled] to use the ASUS MyLogo™ feature.

Add On ROM Display Mode [Keep Current]

Sets the display mode for option ROM.
Configuration options: [Force BIOS] [Keep Current]

Bootup Num-Lock [On]

Allows you to select the power-on state for the NumLock.
Configuration options: [Off] [On]

PS/2 Mouse Support [Auto]

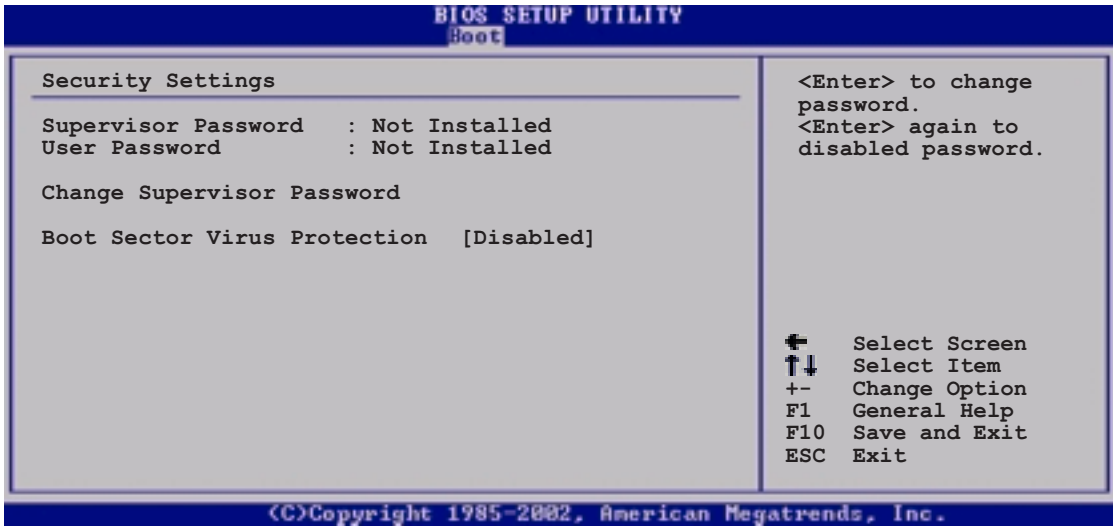
Allows you to enable or disable support for PS/2 mouse.
Configuration options: [Disabled] [Enabled] [Auto]

Interrupt 19 Capture [Disabled]

When set to [Enabled], this function allows the option ROMs to trap Interrupt 19. Configuration options: [Disabled] [Enabled]

5.6.3 Security

The Security menu items allow you to change the system security settings. Select an item then press <Enter> to display the configuration options.



Change Supervisor Password

Select this item to set or change the supervisor password. The Supervisor Password item on top of the screen shows the default **Not Installed**. After you set a password, this item shows **Installed**.

To set a Supervisor Password:

1. Select the Change Supervisor Password item and press <Enter>.
2. From the password box, type a password composed of at least six letters and/or numbers, then press <Enter>.
3. Confirm the password when prompted.

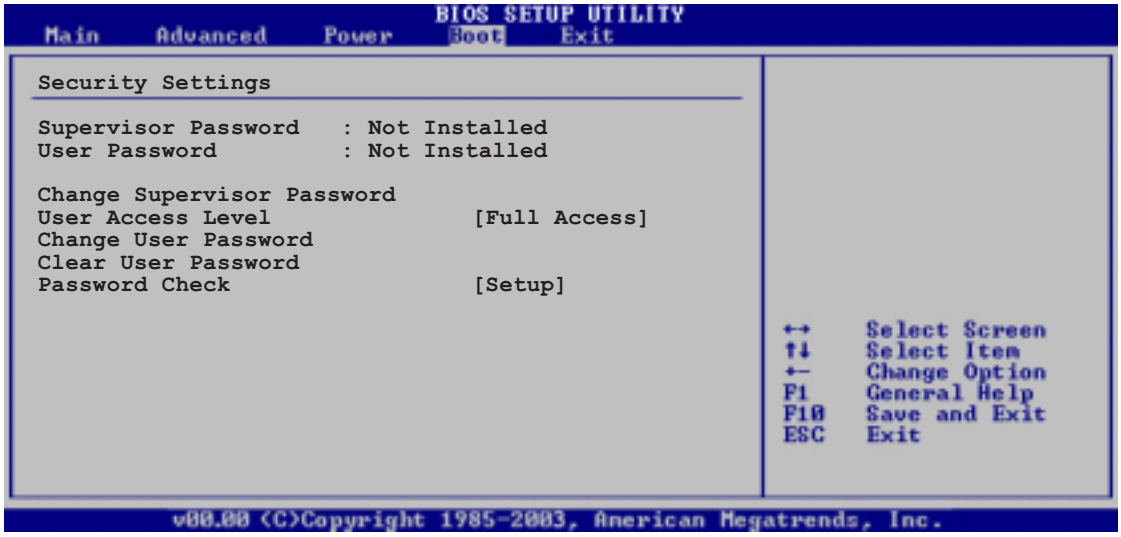
The message “Password Installed” appears after you successfully set your password.

To change the supervisor password, follow the same steps as in setting a user password.

To clear the supervisor password, select the Change Supervisor Password then press <Enter>. The message “Password Uninstalled” appears.

If you forget your BIOS password, you clear it by erasing the CMOS Real Time Clock (RTC) RAM. See section “4.2 Jumpers” for information on how to erase the RTC RAM.

After you have set a supervisor password, the other items appear to allow you to change other security settings.



User Access Level (Full Access]

This item allows you to select the access restriction to the Setup items. Configuration options: [No Access] [View Only] [Limited] [Full Access]

No Access prevents user access to the Setup utility.

View Only allows access but does not allow change to any field.

Limited allows changes only to selected fields, such as Date and Time.

Full Access allows viewing and changing all the fields in the Setup utility.

Change User Password

Select this item to set or change the user password. The User Password item on top of the screen shows the default **Not Installed**. After you set a password, this item shows **Installed**.

To set a User Password:

1. Select the Change User Password item and press <Enter>.
2. On the password box that appears, type a password composed of at least six letters and/or numbers, then press <Enter>.
3. Confirm the password when prompted.

The message “Password Installed” appears after you set your password successfully.

To change the user password, follow the same steps as in setting a user password.

Clear User Password

Select this item to clear the user password.

Password Check [Setup]

When set to [Setup], BIOS checks for user password when accessing the Setup utility. When set to [Always], BIOS checks for user password both when accessing Setup and booting the system.
Configuration options: [Setup] [Always]

Boot Sector Virus Protection [Disabled]

Allows you to enable or disable the boot sector virus protection. Make sure to install Windows® XP Service Pack 2 or Windows® 2003 Service Pack 1 or later to use this feature. Configuration options: [Disabled] [Enabled]

5.7 Exit menu

The Exit menu items allow you to load the optimal or failsafe default values for the BIOS items, and save or discard your changes to the BIOS items.

Pressing <Esc> does not immediately exit this menu. Select one of the options from this menu or <F10> from the legend bar to exit.

Exit & Save Changes

Once you are finished making your selections, choose this option from the Exit menu to ensure the values you selected are saved to the CMOS RAM. An onboard backup battery sustains the CMOS RAM so it stays on even when the PC is turned off. When you select this option, a confirmation window appears. Select **<OK>** to save changes and exit.

If you attempt to exit the Setup program without saving your changes, the program prompts you with a message asking if you want to save your changes before exiting. Press <Enter> to save the changes while exiting.

Exit & Discard Changes

Select this option only if you do not want to save the changes that you made to the Setup program. If you made changes to fields other than System Date, System Time, and Password, the BIOS asks for a confirmation before exiting.

Discard Changes

This option allows you to discard the selections you made and restore the previously saved values. After selecting this option, a confirmation appears. Select **<OK>** to discard any changes and load the previously saved values.

Load Setup Defaults

This option allows you to load the default values for each of the parameters on the Setup menus. When you select this option or if you press <F5>, a confirmation window appears. Select **<OK>** to load default values. Select **Exit & Save Changes** or make other changes before saving the values to the non-volatile RAM.